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NICARAGUA
PUBLIC LAW 480 TITLE II
BELLMON ANALYSIS

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By Roberta van Haeften
Food Security Consultant

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EXECUTIVE SUMMARY

Section 403 of Public Law 480 requires that food donated under the act "*will not result in a substantial disincentive to or interference with domestic production or marketing in that country.*" Section 403 also mandates that at the time of arrival of the food commodity, there will be adequate storage facilities to prevent spoilage or waste. These two requirements are usually referred to as the Bellmon amendment after the senator who introduced the legislation. This Bellmon analysis will address these issues.

Commodities for Direct Distribution

The provision of the commodities that have been chosen for direct distribution will not have a disincentive effect on local agricultural production nor disrupt normal marketing systems. The three Title II PVOs (ADRA, PCI and SAVE[1]) are proposing to import approximately 2.8 thousand metric tons of CSB (corn soy blend), 1.4 thousand metric tons of rice and less than 1 thousand metric tons each of beans, vegetable oil and corn for direct distribution during FY2000.

These quantities are too small to have any noticeable effect on local prices, and therefore on local production, or markets at the national level. The imports of corn soy blend and corn represent less than 3 percent of the total human consumption of corn in the country. The imports of rice represent less than 1 percent of total rice consumption, the imports of beans less than 2 percent of the total consumption of beans, and the imports of vegetable oil less than 2 percent of the total human consumption of vegetable oils. Furthermore, the fact that the Title II programs are targeted to the poorest areas of the country and to some of the poorest households in these areas means that these donations are highly likely to represent a net addition to the consumption of these households. And this increase in demand also should help offset any potential downward pressure on prices due to the increase in supply of these commodities.

This is not to say that problems could not arise in more limited geographical areas of the country, for example, in the event that two or more PVOs were distributing food in the same community. This is not likely to be a problem with the three Title II programs, since each are now working within carefully defined geographic areas. On the other hand, the World Food Programme has been given approval for a fairly large and ambitious program. So, care needs to be taken to insure that this program and the Title II programs are well-coordinated on the ground in order to avoid inadvertent disincentive effects in the more limited geographic areas where these programs are working.

Commodities for Monetization

The three Title II PVOs also need to identify a commodity that they can monetize in an amount that will earn them the approximately $2 million a year they need to cover the local currency

[1] ADRA (Adventist Development Relief Agency), PCI (Project Concern International) and SAVE (Save the Children).

portion of their logistics costs. A number of possible options were considered, including wheat, wheat flour, rice, beans, yellow corn, soybeans, soybean meal and crude degummed soybean oil.

As it turns out, it is relatively easy to find a commodity to monetize that will not have a disincentive effect on local agricultural production, given the structure of Nicaraguan agriculture and the relatively openness of the economy. The more difficult task is to find a commodity that can be monetized in sufficient amounts but yet not disrupt the commercial import market. The crux of the problem is the small size of the Nicaraguan market. Although Nicaragua is the largest country in Central America in terms of geographical size, in terms of the size of its market, it is the smallest. The Nicaraguan market is small because the population is small. However, more important is the fact that Nicaragua is still a very poor country with a large percentage of its population still living in extreme poverty.

Most of the commodities that were analyzed (wheat, wheat flour, rice, yellow corn, soybean meal and soybean oil) meet the Bellmon test. That is, these commodities could be monetized in the quantities required without having a disencentive effect on local production or markets. The caveat is that they need to be sold at market prices and the buyers need to pay all the tariffs and taxes that would be applied to any commercial import of these products. Productivity levels are low in the Nicaraguan agricultural sector, and the country already relies on imports of these commodities to meet current levels of effective demand despite the positive levels of protection that producers are receiving as a result of the combined effects of current government policies. Nicaraguan farmers are responsive to prices, and the fact that international prices are trending downward for a number of these products could have a depressing effect on domestic production independent of the food assistance program. However, the more serious constraints to increased domestic production of these products[2] are internal to the Nicaraguan economy and include the high cost of inputs and the lack of productive infrastructure which also leads to higher production and marketing costs.

Whether any of these commodities are viable options for montization ultimately will depend on USDA's assessment of the total import demand for the commodity and where it sets the Usual Marketing Requirement (UMR) The viability of each of these options also depends on the decisions that USDA makes with respect to its Title I program and the five Section 416 (b) proposals that it has received. Close coordination will be required between USAID and USDA in making the commodity selection. If the commodity selected also is included in one of USDA's programs, close coordination also will be required in the implementation of the monetization to avoid market disruptions. Coordinating the timing of the shipments and sales is particularly important to avoid over taxing the storage and distribution system and competing with each other with respect to sales price.

Wheat and crude degummed soybean oil are the most attractive options at this point in time. This is because the total import market is much bigger for these commodities than for some of the other commodities that were considered, and the country is much more dependent on imports to meet demand for these commodities. Nicaragua is totally dependent on wheat imports to meet its domestic

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[2] Wheat, which is not suitable for production in Nicaragua due to inappropriate climatic conditions, is an exception.

needs and substantially dependent on imports of vegetable oil. Furthermore, in order to supply their $2 million in local currency needs, the Title II PVOs would only have to import approximately 8.5 thousand metric tons of wheat, which is less than 10 percent of average import levels, or only 3 thousand metric tons of crude degummed soybean oil, which is less than 10 percent of average import levels. The advantages and disadvantages of these two options and the other options analyzed are discussed in detail in the section on the "Analysis of Individual Commodity Markets."

Another option is to provide the Title II PVOs with the local currencies that they need out of the resources that have already been generated under last year's Title I program. This would have to be agreed to by the Government of Nicaragua. However, this option has a number of attractive features, for USAID and the Title II PVOs as well as USDA. There are two pluses from the perspective of USAID and the Title II PVOS. First, access to these currencies is likely to be quicker than if the Title II PVOs had to import and monetize a commodity on their own. Second, it would eliminate the need for them to spend time and resources on the monetization process and allow them to concentrate on the implementation of their development programs. This option also would allow USDA to consolidate all the monetization programs under its own direction, which should simplify the management of its programs and reduce coordination problems and potentials for disrupting commercial markets.

Storage

Port and storage facilities in Nicaragua are adequate for handling and storing all the direct distribution commodities and any of the commodities that have been considered for monetization.

ACRONYMS

ADRA	Adventist Development and Relief Agency
CIF	Cost, Insurance and Freight
CSB	Corn Soy Blend
DNS	Dark Northern Spring Wheat
ENABAS	Nicaraguan Basic Food Enterprise
ENAP	Nicaraguan Government Port Authority
FAO	Food and Agricultural Organization of the United Nations
FAS	Foreign Agricultural Service, USDA
FFP	Office of Food for Peace, USAID
FFW	Food for Work
FY	Fiscal Year (October 1 to September 31)
GON	Government of Nicaragua
HA	Hectare (1 hectare = 10,000 square meters = 1.423 manzanas)
HIPC	Highly Indebted Poor Country Initiative
IDB	Inter American Development Bank
IMF	International Monetary Fund
KG	Kilogram (1 kilogram = 2.2046 pounds)
MAG-FOR	Ministry of Agriculture, Livestock and Forestry
MAS	Ministry of Social Affairs
MT	Metric Tons (1 metric ton = 2,204.6 pounds)
PCI	Project Concern International
PVO	Private Voluntary Organization
SAVE	Save the Children
SRW	Soft Red Winter Wheat
UMR	Usual Marketing Requirement
US$	United States Dollar
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
WFP	World Food Program

BACKGROUND

During October 1998, Hurricane Mitch swept through the Central American isthmus causing what was considered to be the most destructive natural disaster in the history of Honduras and Nicaragua. Heavy rains, strong winds, mudslides and massive flooding affected over 860 thousand people, and caused more than 3,000 deaths, most of whom died as a result of the mudslide caused by Casitas Volcano in Posoltega. The GON estimates between 200 and 300 thousand people's homes were partially damaged or destroyed. The hurricane also destroyed many of the crops that were in the field during the "Postrera" season, which had an immediate effect on the food security of thousands of small and medium-sized farmers in the departments of Nueva Segovia, Madriz, Jinotega, Maltagalpa, Leon and Chinandega. The GON also estimates that agricultural losses could total up to $1.5 billion (50 percent of GDP), if damages to productive infrastructure and productive capacity also are taken into account.

International support for Nicaragua in the aftermath of Hurricane Mitch has been significant. At the Consultative Group meeting in Stockholm in May 1999, donor countries pledged $9 billion for Central America, $2.5 billion of which is earmarked for Nicaragua. The United States is programming over $94 million in supplemental resources to assist Nicaragua in its recovery, over $52 million of which will help support the reactivation of the economy. The United States and other donor countries in the Paris Club also deferred Nicaragua's debt payments until early 2001. With a foreign debt of more than $6 billion, Nicaragua has one of the highest per capita debts in the world. Nicaragua also hopes to receive additional debt forgiveness in 1999 through participation in the Highly Indebted Poor Country (HIPC) initiative.

Geography and Demographics

Nicaragua is situated in the heart of the Central American isthmus, between the Atlantic and Pacific Oceans and bordered by Honduras on the north and Costa Rica to the south. Slightly smaller than the state of New York, it is the largest of the Central American countries, with a territory of over 121 thousand square miles. Measured in terms of the size of its population,

Basic Indicators for the Central American Economies

	Population (Millions)	*Land Area (Thousands of Square Miles)*	*Population Density (People per Square Mile)*	*Gross National Product (GNP) (Billions of US$)*	*GNP Per Capita (US$)*
Costa Rica	4	51	66	9.3	2,640
El Salvador	6	21	273	10.7	1,810
Guatemala	11	108	98	16.8	1,500
Honduras	6	112	53	4.4	700
Nicaragua	5	121	36	1.9	410
Panama	3	74	35	8.4	3,080

Source: World Bank, World Development Report, 1998/99.

however, it is one of the smaller countries. And it has by far the smallest economy. In 1997, for example, the Nicaraguan economy was only about one tenth of the size of the Guatemalan

economy.

The population is growing fast -- at approximately 2.8 percent per year compared to a LAC average of 1.6 percent. And the country is becoming increasingly urbanized, with 60 percent of the population now living in urban areas and 40 percent in rural areas.[3] Social indicators are low. Life expectancy at birth is 68 years, compared to a LAC average of 70 years. The infant mortality rate is 43 deaths per 1,000 live births, compared to a LAC average of 32. Forty-three percent of the population is less than 15 years of age. Thirty-seven percent of the population over 15 is illiterate, compared to 13 percent for the LAC region as a whole.

The country is divided into three geographical regions: the Pacific Lowlands in the west, the mountainous Central Region, and the Atlantic lowlands in the east.

Pacific Region -- About 60 percent of the economically active population live in a lowland strip along the Pacific coast. Although this region accounts for only 17 percent of the total land area of the country, it is where most of the infrastructure, investments, and development projects are concentrated. The Pacific Region includes the Departments of Rivas, Carazo, Masaya, Granada, Managua, Leon and Chinandega.[4] The climate is dry tropical with 600 to 1,500 mm of rain per year.

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[3] These are Government of Nicaragua estimates. According to World Bank estimates the population in 1998 was 64 percent urban and 36 percent rural.

[4] Nicaragua's Departments are also aggregated into nine political regions. The Departments of Leon and

This used to be a big cotton producing area. However, Nicaraguan producers are no longer competitive in international markets -- international prices are to low and their costs are too high. Now, the main crops in this area are corn, rice, sorghum, sugar cane, soybeans, sesame and peanuts.

Central Region -- The majority of small holders are concentrated in the Central Region in the Departments of Rio San Juan, Chontales, Boaco, Matagalpa, Esteli, Madriz, Nueva Segovia, and Jinotega.[5] This area accounts for approximately 50 percent of the land area, but only around 30 percent of the population. This area is mountainous, cool and wet (600 to 2,000 mm of rain per year.) In the 1980s and 1990s, this area contributed 68 percent of the national production of corn and beans, 22 percent of the national production of sorghum, and 39 percent of rice. Coffee is the most important export crop from this region, followed by tobacco and vegetables.

Atlantic Region -- The Atlantic Region includes approximately 35 percent of the country's land area, but less than 10 percent of its population. The climate is humid, a large portion of the land is still covered by Pine forests and Mangroves, and contains fragile soils that are not well suited for agriculture once the forests cover has been removed. The region is less developed, and its main products are fish and wood.

The Economic Situation and Outlook

The Nicaraguan economy was in chaos at the end of the 1980s, following a decade of civil war and inefficient and distortionary policies. GDP had dropped to two-thirds of pre-1980 levels and export volumes to one half, while public debt had multiplied tenfold to $11 billion, or 700 percent of GDP. The country suffered from hyperinflation, an overextended public sector and an underdeveloped, over-regulated private sector.

Since 1990, when peace was reestablished, the country has undergone a significant transformation, reemerging as an inclusive democracy and beginning the transformation to a market-based economy. Nicaragua's economy had been performing well during the mid-1990s, with sustained improvements in stabilization and economic growth. GDP growth for 1998 and 1999 was projected at 6 percent, for example, the Government was meeting its economic targets under an IMF-supported program, and it was making progress in the implementation of its structural reform program.

Actual GDP growth in 1998, in the aftermath of Hurricane Mitch, was only 4 percent. The agricultural sector was the sector most affected, with its growth rate falling from 8.3 percent in 1997 to 4.2 percent in 1998. The effects of the hurricane also are expected to have a substantial effect on the economy over the medium-term. The hurricane affected some of the country's most productive agricultural lands and also caused major damage to key transport routes. The projected fall in exports, coupled with higher imports related to rehabilitation and reconstruction, are expected to increase the current account deficit and the financing gap

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Chinandega are included in Region II; Region III consists of Managua: and Masaya, Granada, Carazo and Rivas are included in Region IV.

[5] The Departments of Nueva Segovia, Madriz and Esteli are included in Region I, Jinotega and Matagalpa are included in Region VI; Boaco and Chontales are included in Region V; and Rio San Juan is included in Region IV.

There is no doubt that the country is moving in the right direction and that substantial progress has been made in the present decade. In fact, data from a recent Living Standards survey suggests that the percent of households living in poverty has declined since 1993, especially in the rural areas. On the other hand, Nicaragua's GNP is only $1.9 billion. Per capita GDP is only $410, the second lowest in the Western Hemisphere. And close to one million rural Nicaraguans have incomes below the extreme poverty level, which means that they cannot meet their minimum daily calorie requirements even if they were to devote all their income to food.

THE AGRICULTURAL SECTOR

Its Importance in the Economy

Nicaragua is essentially an agricultural country with a very small manufacturing base. It is dependent on imports for part of its food supply and for most manufactured, processed and consumer items. The agricultural sector, which includes crops, livestock, fisheries and forestry, accounted for over 28 percent of the country's GDP in 1998.[6] This estimate only includes the value of primary production. However, if activities such as food processing and the storage and transportation of agricultural products are taken into account, the Nicaraguan agricultural sector would probably account for more than 50 percent of the country's GDP. The agricultural sector also accounts for 60 percent of the country's foreign exchange earnings, and employs 43 percent of the country's labor force.

The Natural Resource Base

The agricultural sector has the potential to continue to play a major role in Nicaragua's development. This is because the country has a good natural resource base and a low population density. Fifty-six of the country's land area is devoted to crops and livestock (6.8 million out of 12 million hectares), and 26 percent is still in forests (3.2 million hectares). Nineteen percent of the 6.8 million hectares (1.3 million hectares) is devoted to crops and 81 percent (5.5 million hectares) to pastures. Only 96 thousand hectares are irrigated, out of a potential of 300 thousand.

Dynamics of the Sector

During the late 1980s the Nicaraguan agricultural sector, like the economy as a whole, experienced negative rates of growth. Growth turned positive at the beginning of the 1990s, however, and became very robust after 1993, growing at an average annual rate of 5.8 percent between 1994 and 1998. Since 1994, the agricultural sector has been the most important factor in the growth in the economy as a whole. The agricultural sector also has increased in importance as a percentage of the overall economy during this time period, a phenomenon not seen elsewhere in the region.

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[6] Nicaraguan Central Bank estimate for 1998. The World Bank estimated that the agricultural sector accounted for 34 percent of the country's GDP in 1997.

Average Annual Rates of Growth in Selected Sectors of the Economy for Selected Years
(Percent)

	1980-84	*1985-89*	*1990-94*	*1994-98*	*1997-98*	*1990-98*
Crops	5.4	-20.2	0.7	8.8	7.2	4.7
Exportables	5.2	-34.0	-2.0	8.4	9.3	3.1
Importables	6.9	0.8	8.1	6.4	2.4	7.2
Others	2.9	-8.0	-0.3	15.6	8.3	7.4
Livestock	0.3	-4.2	4.0	0.2	-1.8	2.1
Agriculture	3.6	-13.6	1.9	5.8	4.4	3.8
Total GDP	1.9	-4.1	0.8	4.5	4.0	2.6

Source: MAG, Octubre 1999 (Based on Central Bank data).

Within the sector, the crop sub-sector has been very dynamic, growing at 8.8 percent per year between 1994 and 1998. In contrast, the livestock sub-sector grew at only 0.2 percent during the same time period.

Sector growth slowed in 1998, however, as a result of the effects of Hurricane Mitch. In 1998, the overall sector only grew by 4.4 percent, down from 8.3 percent in 1997. Crop production grew by 7.2 percent, down from 8.3 percent in 1997. And the livestock industry experienced a negative rate of growth (-1.8 percent) as a result of the decline in international beef prices and limited credit, as well as the effects of Hurricane Mitch.

Structure and Dynamics of Crop Agriculture

In terms of area planted, corn (white) is the most important food crop (accounting for 26 percent of the area planted to crops), followed by beans (15 percent), and rice (10 percent). White corn is used

Structure of Crop Agriculture

Product	*Area*		*Value Added*	
	1,000 Hectares	Percent	Million US $	Percent
Domestic Food Crops				
Beans	90.6	15.4	26.8	6.6
Corn	154.8	26.4	44.3	11.0
Rice	59.6	10.1	45.5	11.3
Export Crops				
Banana	2.1	0.4	2.5	0.6
Coffee	103.8	17.7	117.9	29.2
Cotton	0.8	0.1	1.6	0.4
Sugar Cane	52.1	8.9	54.1	13.4
Non-Traditional Exports				
Peanuts	12.2	2.1	9.2	2.3
Sesame	9.9	1.7	4.4	1.1
Sorghum	27.8	4.7	11.1	2.7
Soybeans	15.3	2.6	9.4	2.3
Tobacco	9.7	1.7	16.3	4.0
Other	48.6	8.3	60.6	15.0
TOTAL	587.3	100.0	403.6	100.0

Source: Central Bank of Nicaragua, July 1999 .

primarily for human consumption while sorghum, which is planted on 5 percent of the land, is used primarily for animal feed. Main cash crops are coffee, sugar cane, fruit and vegetables. Coffee is by far the most important export crop, accounting for almost 20 percent of the area planted to crops, almost 30 percent of the value added by crops, and almost 60 percent of the total value of the country's agricultural exports. Cotton, which used to be a major component of the country's agricultural sector, now accounts for less than one percent of the land devoted to crops and less than one percent of the value added by crops to the agricultural sector.

Most of the growth in the crop sub-sector has come from increases in the area planted. Average yields only increased by 2 percent per year during the 1990s whereas area planted increased by 33 percent. The production of importables (corn, beans, rice, soybeans) increased faster during the beginning of the decade, but now it is the exportables (coffee, sesame, sugar cane) that are showing a more rapid increase.

Coffee was the single most dynamic product within the crop sub-sector during the 1990s, with production increasing substantially due to an expansion of the area devoted to coffee production and important gains in productivity. The production of cotton, on the other hand, which used to be a major crop on the low plains in the Pacific Region, has virtually disappeared. The production of sugar cane, peanuts, sorghum, soybeans and tobacco has increased, primarily because of the expansion of the area planted to these crops. The production of corn, rice and beans also has increased. Again, this has been

Average Annual Growth in Production, Area and Yields, 1990/91 and 1997/98 (Percent)

Products	*Production*	*Area*	*Yield*
Domestic Food Crops			
Beans	4.0	3.7	0.3
Corn	4.1	4.2	-0.0
Rice	12.6	10.1	2.3
Export Crops			
Banana	-5.4	-3.2	-2.3
Coffee	13.1	3.3	9.6
Cotton	-38.6	-37.1	-2.4
Sugar Cane	5.3	3.0	2.2
Non-Traditional Exports			
Peanuts	25.0	16.8	7.0
Sesame	-8.9	014.3	6.3
Sorghum	3.1	2.6	0.5
Soybeans	31.2	27.8	2.6
Tobacco	8.2	15.1	-6.0

Source: Central Bank of Nicaragua, July 1999.

primarily due the expansion of the area planted, although rice, in particular has experienced some increase in yields.

Productivity, Technology and Access to Services

Productivity in the agricultural sector in Nicaragua is quite low. The value of agricultural output per

agricultural worker is low. The use of new technology – fertilizers and agricultural machinery – is low. Even yields per hectare of the major food crops, which is a measure of productivity particularly

A Comparison of Alternative Measures of Agricultural Productivity

Country	*Agricultural Labor Productivity*	*Fertilizer Consumption*	*Agricultural Machinery*	
	Agricultural value added per worker in 1995 in US$	*Hundreds of grams per hectare of arable land in 1995-97*	*Tractors per 1000 agricultural workers in 1994-96*	*Tractors per 1000 hectares of agricultural land*
Argentina	13,833	254	190	112
Australia	29,044	376	698	65
Brazil	3,931	898	51	142
Chile	5,211	1,131	44	119
Colombia	2,890	2,853	7	118
Costa Rica	4,627	3,636	23	246
Mexico	1,690	538	20	71
New Zealand	NA	4,247	451	488
Nicaragua	1,407	147	7	11

Source: World Bank Development Indicators, 1999.

relevant to this analysis, are low in comparison to other producing countries.

A Comparison of Average Yields for Basic Food Products

(Metric Tons per Hectare)

Country	*Beans*	*Corn*	*Rice*	*Sorghum*	*Soybeans*
Argentina	1.1	5.6	4.9	4.4	2.5
Australia	1.0	5.1	9.0	2.2	2.0
Brazil	0.7	2.8	2.9	1.8	2.4
Chile	1.6	9.1	4.1	NA	NA
Colombia	1.0	1.8	4.5	3.2	2.2
Costa Rica	0.4	1.8	3.4	NA	NA
Mexico	0.7	2.3	4.8	3.3	1.5
Nicaragua	0.6	1.1	2.5	1.7	1.6
United States	1.8	8.4	6.5	4.3	2.6

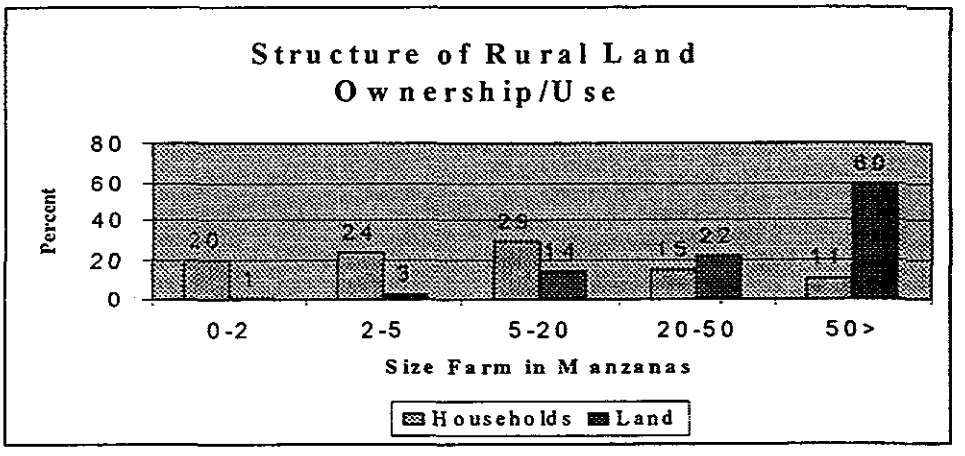
Source: FAO, FAOSTAT, October 1999.

More modern technology is usually associated with the larger-scale producers. Larger-scale farmers usually have access to more highly productive land, use agricultural chemicals, and plant and harvest their land with machinery. Many have access to irrigated land and may have their own storage, drying and post harvest processing facilities. These farmers usually practice monoculture, over large areas using yield intensive techniques. They are more likely to grow rice or industrial sorghum (sorghum produced and sold for livestock) than corn or beans, and to devote a greater share of their land to the production of export crops (tobacco, sugar and coffee) and to raising livestock. They are also likely to have access to credit and technical assistance from private sources.

Smaller-scale producers tend to have lower levels of productivity and are poorer. The majority of the land used by poorer households is devoted to producing food crops (primarily basic grains). Typically corn and "million" sorghum (for human consumption) are produced as crops for home consumption. Beans are produced for home consumption and also as a cash crop. Corn alone can represent over 40 percent of the area planted by the poor. Yields of basic grains are low, ranging on average from 0.6 metric tons per hectare for beans and 1.1 metric tons per hectare for corn, according to FAO. Average yields are slightly higher for rice (2.5 metric tons) and sorghum (1.7 metric tons), the two crops which tend to be produced by larger farmers, but still low in comparison to average yields in other producing countries. The majority of small holders cultivate on sloping eroded, marginal lands, or on land subject to flooding. They prepare their land by hand or with the use of rudimentary animal-drawn wooden plows, seldom use improved or certified seeds, and use agrochemicals, if at all, sporadically and at low rates. Access to technical assistance, credit, and inputs is limited and is more likely to be available from an NGO, and secondarily the GON agencies.

Land Holding and Land Titling and Land Market Conditions

Landholding in Nicaragua is still extremely concentrated despite the agrarian reforms that took place in the 1980s and the land-titling program that was initiated in the 1990s. More than 40 percent of farm households have farms less than 3.5 hectares (5 manzanas), but in terms of total area farmed, these households account for only 4 percent of the land. In contrast, rural households with farm sizes of over 35 hectares (over 50 manzanas), represent 11 percent of the total farm households but operate on 60 percent of the land.



Unresolved conflicts over property rights, that limit access to credit and discourage investment, still represent one of the more important constraints to the development of the agricultural sector. By the 1996 elections, more than 25 percent of the urban and rural property units in Nicaragua were affected by some dispute or discrepancy between an occupant and at least one other person who had a claim on the property. Conflicts over land ownership appear to be a significant determinant to the underutilization of land and this is reflected in a seriously imperfect rural land market. Ownership disputes continue to limit productive investment in the sector.

Basic Infrastructure

Lack of basic infrastructure in rural areas is one of the most important constraints to the development of the agricultural sector in Nicaragua and to the reduction of rural poverty. Problems include:

- Bad secondary and tertiary roads
- Poor telecommunications and high priced and limited electricity
- Limited agricultural infrastructure (irrigation systems, storage, cool chains, etc.)
- High cost and inefficient port facilities

Poor infrastructure adds to the costs of doing business in Nicaragua and makes it more difficult for Nicaraguan agricultural producers to compete with producers from elsewhere in the world. Small farmers lose as well as larger farmers.

A preliminary analysis of the data from the 1998 Living Standards Survey, for example, provides an indication of the benefits to be gained by rural households from additional investments in basic infrastructure in rural areas. For example, the income of a household was increased by almost 1,000 Cordobas if the household had access to a paved road year round. And access to one additional manzana (0.7 hectare) of irrigated land increased own-farm income by over 4,000 Cordobas (According to the World Bank, per capita income in Nicaragua in 1998 was $410 which was equivalent to 4,920 Cordobas using an exchange rate of US$1 = 12 Cordobas). An increase in one manzana of rainfed land, by way of contrast, only increased farm income by 31 Cordobas.[7]

Port Facilities

High cost and inefficient port facilities represent a tax on the entire economy. They also have a more direct and immediate impact on the Title II program and the ease, or lack thereof, with which the Title II PVOs are able to import the commodities that they need to implement their programs. Nicaragua has six seaports, all of which are operated by the Government-run port authority (ENAP). The most suitable for commercial shipping is the Port of Corinto which is located on the Pacific coast, 100 miles northwest of Managua. Of relevance to the Title II program, the Port has a capacity to handle 1.5 million metric tons of cargo per year and significant storage capacity for basic grains exists near the port at various industrial facilities. There also is storage capacity for up to 10 thousand metric tons of vegetable oil located near the Port.

Because of poor infrastructure and high operating expenses, most containerized sea cargo and fresh fruits are shipped by highway to and from Puerto Limon in Costa Rica and Puerto Cortez in Honduras. Most estimates of the discharge costs in Puerto Corinto are that they range from 30 to 35 percent higher than other ports in the region. Use of the port also is restricted by the fact that only smaller ships with a maximum draft of 10.5 meters or less can currently enter the port.

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[7] Corral and Reardon, "Rural non-farm and farm incomes in Nicaragua: evidence from the 1998 Living Standards Measurement Survey, October 1999.

The port authority is making improvements in the Corinto facilities in the hopes that it can increase the port's competitiveness and eventually privatize it. A program to reduce the workforce through buy-outs, which was supported by PL 480 Tittle III resources, has already been implemented. A second activity, supported by a $26 million grant from the Taiwan Government, is designed to improve port infrastructure including, by dredging the port so that ships with greater cargo capacity can begin using the port. Dredging operations were supposed to have begun in August to increase the maximum draft to 13.5 meters.

Agricultural and Related Policies

The Government has made significant progress in liberalizing the economy and opening it up to the rest of the world. Since 1990, all state monopolies except for public utilities have been eliminated, virtually all price controls have been phased out, and more than 300 state enterprises have been privatized.

Nicaragua also is in the process of implementing progressive import tax reductions through the year 2002. As of July 1999, Nicaragua began to impose regular import duties (DAI) of 15 percent on final consumption goods and 10 percent on intermediate good (there is no DAI on raw materials and capital goods produced outside of the Central American region, but raw materials and capital goods imported from any Central American country carry a 5 percent DAI). The goal

Import Duties (DAI) for Selected Agricultural Products
(Percent)

Products	*July 97*	*July 98*	*July 99*	*July 00*	*July 01*	*July 02*
Beans & White Corn	25	20	15	10	10	10
Milled Rice	30	30	25	25	5	5
Paddy Rice	20	20	15	15	15	15
Yellow Corn & Sorghum	20	15	15	10	20	20
Wheat	na	na	0	na	na	na
Wheat Flour	na	na	5	na	na	na
Sugar	55	50	45	45	45	45
Chicken Breast & Whole Broiler Carcasses	60	50	40	30	30	10
Broiler Legs & Thighs	200	190	180	170	170	100

Source: MHCP

is to bring the ceiling rate on final consumption goods down to 10 percent. In the meantime, some 900 items also have a temporary protection tariff of 5 to 10 percent applied to them. The maximum rate of the combined DAI and ATP is 25 percent. Nicaragua also levies a luxury tax, and a 15 percent value added tax (IGV) on most items except agricultural inputs.

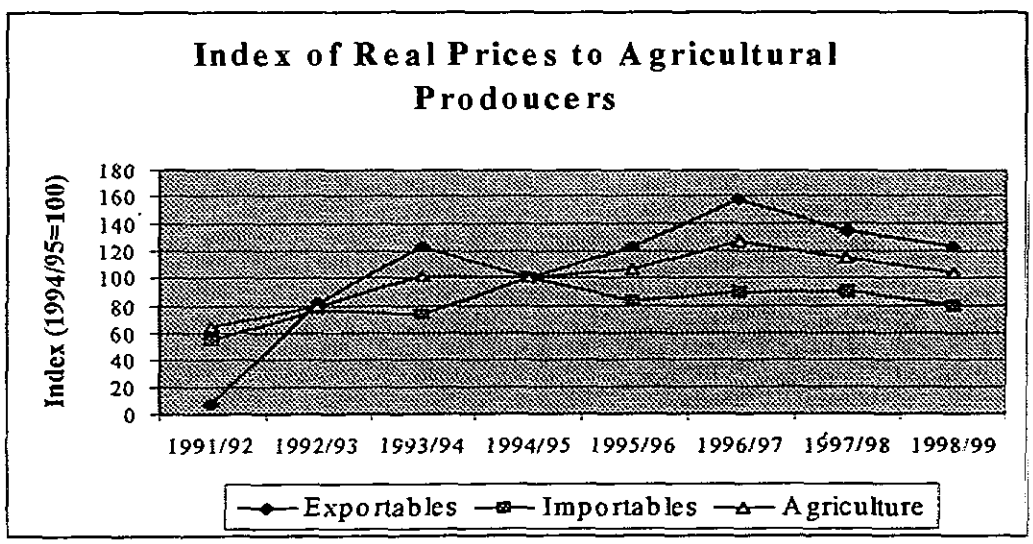
However, different rules seem to apply to some agricultural imports such as chicken parts, for example, which means that some domestically produced food products are going to continue to receive higher rates of protection. This is unfortunate because higher levels of protection are also going to translate into higher food prices for consumers. In March of 1999, the National Assembly passed an ambitious tax package which among other things, will eliminate import taxes

on capital and intermediate goods and raw materials destined for the agricultural sector, small handicraft industries, fishing and aquaculture. This will probably have the effect of giving added protection to agribusinesses that produce for the domestic market in particular but is not likely to result in lower prices to domestic consumers.

Progress also has been slower than expected in some areas of the economy whose performance, or lack thereof, can have major consequences for the agricultural sector. For example the Government has failed to privatize the telephone company for the second time. The country's six seaports are still operated by the government-run port authority (ENAP). And, ENABAS, which started life as a grain stabilization agency, still makes emergency procurements of basic food stuffs and still owns a lot of storage facilities. These first two examples are of particular importance because poor telecommunications and high priced and limited electricity and high cost and inefficient port facilities are frequently cited as some of the most important constraints to the development of the agricultural sector.

Incentives to Production

Real prices paid to farmers, which have fluctuated during the 1990s, are a function of international prices and the structure of protection provided by government policies. In the last two years, the trend in real prices paid to producers has been markedly down and indications are that this trend will continue. The index of prices for the sector as a whole fell by 22 percent between 1995 and 1999, with the fall in prices paid for importables (corn, rice, sorghum) steeper than the fall in prices paid for exportables (coffee, for example). The sector has grown rapidly until now despite these trends. This



is due to a number of factors, including the end of the civil war, the return to a market economy, macroeconomic stability, and the demobilization of the rural population. However, this downward trend in real prices is starting to create problems in certain areas of the agricultural economy and has serious implications for the ability of the sector to maintain high rates of growth in the future.

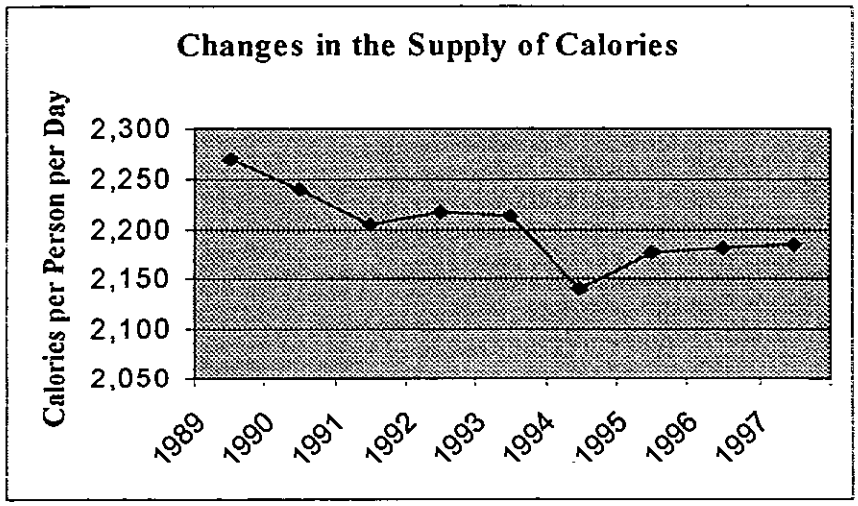
A recent analysis of the sector, which developed estimates of protection for selected crops and

livestock products, found that the net effect of current government policies, including the current tariff structure and exchange rate policy, is to discourage the production of export products and to protect producers of importables. More specifically, the rates of protection for rice, beans, sorghum, corn, soybeans and milk were positive and the rates for coffee, peanuts, sugar cane and beef were negative.[8]

FOOD AVAILABILITY

Nicaragua is a Food Deficit Country

Nicaragua faces a calorie gap at the national level. That is the amount of calories that are available at the national level (2,186 in 1997) are less than the 2,226 calories per person per day that it has been estimated that the Nicaraguan population needs based on FAO's estimates of human energy requirements and the sex and age composition and geographical distribution of the Nicaraguan population. Of course, these estimates assume that the food available in the country is evenly distributed among the population, which never happens. In reality the poor, who have less purchasing power, have access to many fewer calories than do the better off.



The Nicaraguan Diet

Starch from wheat flour, rice, corn, cassava and sugar is the mainstay of the average Nicaraguan diet. This is supplemented with beans, vegetable oil and some eggs and meat. Cereals together constituted 54 percent of the diet at the national level, followed by sugars (17 percent), oils (11 percent), meat, milk and eggs (7 percent) and pulses (5 percent).

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[8] Ministerio Agropecuario y Forestal (MAG-FOR). "Desempeno del Sector Agropecuario y Politica de Incentivos Elementos para una Politica de Incentivos Sectoral," a report prepared for the World Bank's Nicaragua Agricultural Sector Study by the Direccion General de Planes del Sector Agropecuario, Gobierno de Nicaragua, Managua, Nicaragua, Octubre 25, 1999.

Composition of the Nicaraguan Diet, 1996/97

Product	*Calorie Supply Available Per Person Per Day*	
	Amount of Calories	Percent
Cereals	1181	54
Sugars	376	17
Oils	236	11
Meat, Milk, Eggs	158	7
Pulses	113	5
Fruits and Vegetables	47	2
Miscellaneous	40	2
Roots	33	1
Total	100	100

Source: FAO FAOSTAT Food Balance Sheets

Corn is the most important grain, accounting for 42 percent of cereal calories, followed closely by rice, which accounts for 37 percent of cereal calories, and then wheat, which accounts for only 12 percent.

The Importance of Imports

Although predominantly agricultural, Nicaragua imports approximately 25 percent of its total calorie supply and spends about 30 percent of its total export earnings on food imports.[9] The country depends imports to meet all of its wheat needs, three fourths of its needs for vegetable oil and one fourth of its needs for rice.

FOOD ACCESS

Poverty – the Root Cause of Food Insecurity

Poverty, like elsewhere in the LAC region, is the root cause of food insecurity in Nicaragua.[10] Half the population, or about two million people, fall below the poverty line.[11] Forty percent of the poor, or 20 percent of the population (790,000 people) fall below the extreme poverty line and are food poor.

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[9] Author's estimates based on FAO Food Balance Sheet data obtained October 1999 and FAO trade statistics.

[10] Poverty contributes to food insecurity by restricting people's access to the amount and quality of food they need to lead healthy and productive lives. Poverty also constrains people's access to services such as health, water, sanitation and education, which also contribute to food security. Poverty and lack of purchasing power also contribute to the low level of overall food availability in the country. If Nicaragua's poor households had enough purchasing power to translate their nutritional needs into effective demand for food, domestic food production would increase or foreign exchange would be used to pay for the food imports required to make up the gap between total food needs and current levels of domestic production.

[11] The information for the following analysis comes from the 1993 Living Standards Survey, the results of which are reported in a two volume World Bank report entitled "Republic of Nicaragua Poverty Assessment" dated June 1, 1995 (Report No. 14038-NI). Preliminary analysis of the new Living Standards Survey, which was undertaken in 1998, suggests that there has been some reduction in the rate of poverty, more so in rural than in urban areas, but that overall levels of poverty still remain high.

That is, they cannot meet the minimum daily caloric requirement even if they were to devote all of their income to food.

Poverty and extreme poverty also are overwhelmingly rural. Over three quarters of all rural inhabitants live in poverty as opposed to 32 percent of urban dwellers. And, although only around 40 percent of the total population lives in rural areas, 63 percent of all poor and 78 percent of all extremely poor people live in rural areas.

The incidence of poverty also varies geographically. The Northern (Jinotega and Matagalpa) and Segovias (Esteli, Madriz and Nueva Segovia) regions, where the Mission's Title II food programs are concentrated, have 46 percent of all the extreme poor in the country, although they only represent 23 percent of the country's population. In contrast, Managua, with almost one third of the total population, has only 7 percent of the country's extremely poor people.

Poverty is also deeper and more severe in rural areas. The gap between the poverty line and the average expenditures is 11 percent for the urban poor but 37 percent for the rural poor. And, in the poorest Northern and Segovias regions, the average rural poor spend about 48 percent less than the poverty line.

At the household level, food is the major expenditure category for all poverty groups, although its share falls as poverty declines. For the extremely poor, food expenditures represent 62 percent of total expenditures, for the poor 58 percent, and for the non-poor, 43 percent. Among the poor, the largest share of food expenditures is on basic grains (rice, corn, beans, tortillas and bread). These commodities absorb 56 percent of the food expenditures of the extreme poor and 48 percent of the food expenditures of the poor. Changes in the prices of basic grains, therefore, will have a significant impact on household budgets in Nicaragua, and particularly those of the poor. For example, if the prices of all basic grains rose by 10 percent, the food expenditures of the extremely poor would rise by nearly 6 percent while those of the non-poor would rise by only 3 percent (assuming that the same quantities were purchased). However, to the extent the poor are involved in the production of basic grains, price increases will benefit them.

Distribution of Per Capita Food Expenditures by Poverty Group

Product	*Extremely Poor*	*Poor*	*Non-Poor*	*Average*
Basic Grains	56	48	32	42
Sugar, Oil, Salt	19	17	13	15
Dairy	9	13	18	15
Meat	2	7	17	11
Vegetables	4	5	7	6
Fruit	3	4	5	4
Beverages	5	5	7	6
Total Food	100	100	100	100

Source: World Bank, "Poverty Report," 1995.

Chronic Malnutrition

Although Nicaragua has a calorie deficit at the national level, acute malnutrition (also known as wasting or low weight-for-height) is not a problem. Young children are among the most vulnerable and thus usually the first to show signs of malnutrition. However, only 2.2 percent of the children under five are under-weight for their height. This is not surprising since acute malnutrition is usually only seen in countries and/or regions with more extreme and more generalized food shortages, including famine type conditions, than are found in Nicaragua.

Chronic malnutrition, on the other hand, is a problem that affects 25 percent of the children under five in Nicaragua according to the 1998 Demographics and Health Survey.[12] Chronic malnutrition occurs when children do not get adequate amounts of nutrition during the first few years of life. This retards their growth and results in them being too short for their age. The reasons these children do not get enough food can vary. Lack of food in the household, poor household feeding practices, and/or poor biological utilization of food due to illness – all are possibilities. These nutritional insults to young children, which often occur over many months, are particularly harmful, however, because young children are never able to recuperate fully from growth lost during these years. The critical period is the weaning period -- between six and 36 months. Even if the children in question receive sufficient calories after this period, catch-up growth is insufficient to compensate for the earlier deprivation.

Like poverty, chronic malnutrition in Nicaragua is higher in rural areas and in the northern areas of the Pacific and Central Regions of the country. For example, over 31 percent of children living in rural areas are malnourished, compared to only 19 percent in urban areas. And, the rates of chronic malnutrition in Madriz and Jinotega, two provinces in the northern part of the Central Region, are over twice the rate in Managua (49 percent and 39 percent compared to 15 percent). The education of mothers also is an important determining factor for chronic malnutrition, with children born to mothers who have no education much more likely to be chronically malnourished (almost 38 percent) than those born to mothers that have a high school education (12 percent) or higher education (6 percent).

The percentage of children that are chronically malnourished also begins to increase when children reach six months of age, which is the age at which supplemental foods are needed in addition to breast milk. For example, fewer than 5 percent of the children under six months of age suffer from chronic malnutrition, whereas over 13 percent of the children between six and 11 months do and almost 30 percent of the children between 12 and 23 months. This suggests that the way that households feed their weaning-age children[13] and child health and household sanitation may be part of the explanation for the high rates of chronic child malnutrition in the country.

Safety-Net Programs

The Government's that succeeded the Sandinistas have not ignored the need for safety-net programs to help poor households survive during the transformation to a more dynamic market-

[12] Chronic malnutrition is defined as height-for-age < -2 standard deviations from the NCHS gender-specific reference median.

[13] The types and quantities of foods fed to weaning-age children are important as are the number and timing of feedings.

based economy. A lot of attention was given to employment generation programs during the early 1990s to deal with the high rates underemployment and unemployment that existed at that time. A Social Investment Fund was created, with support from the World Bank, the IDB and USAID, to finance activities that employed people to build and maintain productive and social infrastructure throughout the country. To help insure that less-skilled workers also had access to temporary employment opportunities, local currencies from the Title III program were used to support the employment generation programs that were run by the Ministry of Social Affairs (MAS). These were cash for work programs. Food-for-work programs were initiated in the aftermath of Hurricane Mitch to transfer needed resources to those most affected by the Hurricane and will continue to be used by USAID and the WFP to help restore community infrastructure through disaster-related reconstruction projects. As part of the conditions for qualifying for the HIPIC debt relief initiative, the Government of Nicaragua also will be required to expand its support to safety-net programs.

The Title II and WFP development programs also comprise part of the safety-net program in the country, because of the food transfer that takes place. The food that is provided by the Title II PVOs through their health programs represents more than a generalized resource transfer, however. That is, the decision to add a food transfer to these health programs was based on an assessment that concluded that the malnutrition reduction goals of these programs were less likely to be achieved without such a transfer. According to this assessment, the women in these programs knew that they should be feeding their children better but did not have access to sufficient food resources to put this knowledge into practice. The food transfers were expected to be temporary, while Title III local currency resources, among others, would be used to help improve the income earning capacity of the poor households in these areas. More recently, the Title II PVOs have been thinking about expanding their programs to include income generating activities. This would make their programs more responsive to the overall needs of their beneficiary families and would help make up for the loss of Title III resources.

FOOD AID OVERVIEW

The amount of food assistance that the United States provided to Nicaragua expanded significantly in FY99 in response to Hurricane Mitch. In FY98, the Title II development program in Nicaragua, which is the smallest Title II development program in the LAC region, was only $2.5 million. These resources were used by the three Title II PVOs (ADRA, PCI and Save[14]) to import over 4 thousand metric tons of food for distribution as part of their health programs. During FY98, the United States also provided 560 metric tons ($246 thousand) to support the WFP development programs in the country.

In FY99, almost $23 million in Title II food resources were made available to Nicaragua, which is an eightfold increase over FY98. The majority of this increase was made as emergency assistance

[14] ADRA (Adventist Development and Relief Agency), PCI (Project Concern International) and SAVE (Save the Children).

in response to Hurricane Mitch – three fourths of the dollars ($17 million out of $23 million) and two thirds of the food (27 thousand metric tons out of the almost 40 thousand metric tons of food). Almost two thirds of the emergency assistance ($13 million out of $17 million) was made available through the World Food Programme (WFP) -- $8.6 million to support the WFP's EMOP (Emergency Operation) and $4.4 million to support its PRRO (Protracted Relief and

Distribution of Title II Resources in FY98 and FY99

(US$ in Thousands)

Program	*FY 1998*			*FY 1999**		
	Development	*Emergency*	*Total*	*Development*	*Emergency*	*Total*
Title II PVOs**	2,532	--	2,532	4,179	4,141	8,320
WFP	246	--	246	1,630	13,030	14,660
TOTAL	2,778	--	2,778	5,809	17,171	22,980

Source: USAID/FFP monthly report

* FY99 Operating Year Budget (Approved Programs)

** Includes 202e resources

Recovery Operation).

The U.S. Government also has provided over $11 million worth of commodities to Nicaragua in both FY998 and FY99 through USDA's food assistance programs. The great majority of these resources were made available to the Government of Nicaragua which monetized the commodities and used the resources for development purposes. Wheat was the preferred commodity. Fifty-nine thousand metric tons of wheat were made available to the Government of Nicaragua through USDA's Title I program in FY98, along with 3.6 thousand metric tons of crude degummed soybean oil, and 1.5 thousand metric tons of tallow. In FY99, 60 thousand metric tons of wheat were made available to the Government through USDA's section 416 (b) program and 15 thousand metric tons of yellow corn. The Title I Food for Progress program also was used to import 5 thousand metric tons of Pinto beans in FY99. The approved level for the program was 11.8 thousand metric tons. However, the Government had trouble selling the beans due to a combination of factors, including the fact that Nicaraguan consumers prefer red beans and the Pinto beans arrived in country around the time that the local red beans grown during the Apante season (which is the most important season for locally produced beans) became available.

Additional commodities also were under consideration during FY99 as part of the USDA's response to Hurricane Mitch. These included crude degummed soybean oil, tallow and lumber. However, the small size of the Nicaraguan market made it difficult to identify suitable candidates for additional monetizations. Questions also were raised in the late spring as to whether the drop in food availability as a result of the Hurricane was as large as was originally anticipated. Initial estimates of damages due to natural disasters such as hurricanes frequently are adjusted downward. And efforts by the Government, supported by USAID and other donors, such as the use of Title III funds to support an emergency program to increase the area planted to beans during the Apante season, proved effective.

THE TITLE II PROGRAM FOR FY2000

Commodities Proposed for Direct Distribution

The three Title II PVOs (ADRA, PCI and SAVE) are proposing to import approximately 6.4 thousand metric tons of food for direct distribution in FY2000, which is slightly smaller than the amount they

Commodities Proposed By the Three Title II PVOs for Direct Distribution in FY2000

Commodity	*Quantity (Metric Tons)*	*Value (U.S. Dollars)*
Corn Soy Blend	2,750	715,000
Rice	1,283	449,050
Beans	794	551,036
Vegetable Oil	644	499,100
Corn	924	112,728
Sub-Total	6,395	2,326,914
Transportation Costs		479,625
Total Value of Program		2,806,539

imported for their development program in FY99. This will include 2.8 thousand metric tons of CSB (corn soy blend), 1.4 thousand metric tons of rice and less than 1 thousand metric tons each of beans, vegetable oil and corn for direct distribution during FY2000.

These quantities are too small to have any noticeable effect on local prices, and therefore on local production, or markets at the national level. The imports of corn soy blend and corn represent less than 3 percent of the total human consumption of corn in the country. The imports of rice represent less than 1 percent of total rice consumption, the imports of beans less than 2 percent of the total consumption of beans, and the imports of vegetable oil less than 2 percent of the total human

Comparison of Quantities of Commodities Proposed for the Title II Program to Total Quantities Available for Human Consumption in the Country

Commodity	*Quantity Proposed for Direct Distribution (MT)*	*Amount Available for Human Consumption Per Year (1993/97)(MT)**
Corn Equivalents[1]	3,819	237,000
Rice	1,283	190,000
Beans	794	59,000
Vegetable Oil	644	41,000

*FAO Food Balance Sheets, FAOSTAT. October 1999

consumption of vegetable oils. Furthermore, the fact that the Title II programs are targeted to the poorest areas of the country and to some of the poorest households in these areas means that these donations are highly likely to represent a net addition to the consumption of these households. And this should also help offset any potential downward pressure on prices due to the increase in supply of these commodities. And this increase in demand also should help offset any potential downward

pressure on prices due to the increase in supply of these commodities.

This is not to say that problems could not arise in more limited geographical areas of the country, for example, in the event that two or more PVOs were distributing food in the same community. This is not likely to be a problem with the three Title II programs, since they each now are working within carefully defined geographic areas.

On the other hand, the World Food Programme (WFP) has been given approval for a fairly large and ambitious program designed to benefit 390 thousand beneficiaries in its first year and 340 thousand beneficiaries in its second year. This would involve the distribution of almost 40 thousand metric tons of food over the two-year period, including over 19 thousand metric tons of cereals in the first year and over 1.5 thousand metric tons of beans. The WFP plans to distribute over 80 percent of these resources through food-for-work activities, which are thought to be self-targeted to the poor. Still, these are large amounts of food. So, care will need to be taken to insure that this program is, in fact, well-targeted and to insure that it and the Title II programs are well-coordinated on the ground in order to avoid inadvertent disincentive effects in the more limited geographic areas where these programs are working.

Possible Alternatives for Monetization

The three Title II PVOs also need to identify a commodity that they can monetize in an amount that will earn them the approximately $2 million a year they need to cover the local currency portion of their logistics costs. This is in addition to the approximately $6 million that the three PVOs will be receiving from the Nicaragua Mission (out of Hurricane Mitch funds) to cover the development portion of their programs.

A number of possible options were considered, including wheat, wheat flour, rice, beans, yellow corn, soybeans, soybean meal and crude degummed soybean oil. To begin the assessment, a rough calculation was made in order to develop an estimate of the amount of each commodity that would have to be imported and sold in order for the PVOs to obtain the $2 million in local currencies that they need.

Quantities Needed to Produce $2 million in Local Currencies

Commodities	*USAID Price Estimates for FY2000 (US$/MT)*	*Estimates of the Quantities Needed to Achieve the $2 Million in Local Currencies* (1,000 MT)*
Beans, Red	694	2.6
Corn, Bulk	96	11.7
Rice, Bulk	336	4.9
Soybeans, Bulk	220	6.8
Soybean Meal, Bulk	180	7.8
Soybean Oil, Bulk	591	3.0
Wheat, Northern Spring, Dark, Bulk	159	8.5
Wheat Flour	228	6.6

*This includes the cost of transportation which is estimated at US$75 per metric ton

As it turns out, it is relatively easy to find a commodity to monetize that will not have a disincentive effect on local agricultural production, given the structure of Nicaraguan agriculture and the relatively openness of the economy. The more difficult task is to find a commodity that can be monetized in sufficient amounts but yet not disrupt commercial imports. The crux of the problem is the small size of the Nicaraguan market. Although Nicaragua is the largest country in Central America in terms of geographical size, in terms of the size of its market, it is the smallest. The Nicaraguan market is small is because the population is small. However, more important is the fact that Nicaragua is still a very poor country with a large percentage of its population still living in extreme poverty.

ANALYSIS OF INDIVIDUAL COMMODITY MARKETS

Wheat and Wheat Flour

Demand, Production and Imports

According to FAO estimates of the country's food balances, Nicaragua consumes on average about 90 thousand metric tons of wheat per year (average for the years 1993 to 1997).[15] Nicaragua does not produce wheat, due to inappropriate climatic conditions. So, the country meets all its requirements through imports, from commercial sources and donations. Almost all the wheat is imported as grain, and milled in three privately owned wheat mills. These mills import primarily Dark North Spring (DNS) wheat, and lesser quantities of Soft Red Winter (SRW). The mills market the milled wheat as flour mainly for bread production, with some smaller quantities sold for cookies and crackers. The millers buy almost all their wheat from the United States. When they buy on the open market, they usually solicit bids from three to four U.S. suppliers.

Small amounts of flour also have been imported, most recently from Costa Rica. These latter imports, because they were being sold at a cheaper price than the domestically produced flour, are supposed to have become the subject of a court case, and are in abeyance until the case is settled.

A Mexican-based company (BIMBO) also has begun importing and selling finished wheat-based products in the Nicaraguan market again. However, these imports do not seem to have had any significant impact on the demand for wheat imports, since Nicaraguan consumers appear to prefer to buy less expensive products, even if lower in quality. Only a relatively few individuals from higher economic brackets are purchasing BIMBO products.

Most of the wheat has been imported commercially until the last two years when significant amounts have been imported under USDA's Title I program.[16] [17] According to information made available

[15] USDA, in its calculation of the UMR for wheat for Nicaragua for the program year beginning October 1, 1998 used an estimate of 175 thousand metric tons for consumption needs. However, data from USDA's PS&D data base up-dated in October 1999 suggests that the average wheat demand in Nicaragua for the period 1995 to 1999 was approximately 91 thousand metric tons, which is very close to the FAO estimate.

[16] Commodities imported under USDA's Title I concessional sales program are considered as commercial imports

from several sources in Managua, commercial wheat imports have averaged 65 thousand metric tons over the five years 1994 to 1998 and concessional imports averaged 24 thousand metric tons. USDA's estimates for the years 1992/93 to 1996/97 were 65 thousand for commercial imports and 20 thousand

Commercial Imports and Donations of Bulk Wheat
(1,000 Metric Tons)

Market Year	*U.S. Donations*	*Other Donations*	*Total Donations*	*Commercial Imports*	*Total Imports*
1994	0	8	8	78	86
1995	12	3	15	74	89
1996	18	10	28	64	92
1997	7	3	10	69	79
1998	55	3	58	40	98
1999	60	0	60	30	90
Average (1994/98)	18	5	24	65	88

Source: U.S. Embassy Bellmon/UMR Determination for the Section 416 (b) program, February 1999 and information provided to the author by the GON Title I/III Secretariat, October 1999.

for concessional imports.[18]

Imports of Wheat as an Option for Monetization

From the Bellmon perspective, wheat is a potential commodity for the Title II PVOs to monetize. There would be no disincentive effects on local production, since wheat is not produced in Nicaragua, nor on local markets, since the national marketing system is already based on wheat imports.

Wheat also is an attractive option because there is a relatively large import market for wheat, due to the fact that the country has to import its entire wheat supply. Plus, the amount of wheat that the Title II PVOs would have to monetize in order to supply their local currency needs is relatively small in relation to the size of this overall market (8.5 thousand metric tons compared to an overall import market of 88 to 90 thousand metric tons). Another advantage is the fact that wheat has been monetized in the past under both the Title I and Title III programs. And the PVOs could use the same mechanism – the PL480 Secretariat -- that USDA and USAID used to monetize the wheat imported under their respective monetization programs.

The main problem with wheat is the current uncertainty with respect to USDA's plans for its FY2000

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when USDA establishes the UMR (Usual Marketing Requirement), whereas commodities imported under USDA's Title I Food and for Progress and Section 416 (b) programs and USAID's Title II and Title III programs are considered as donations. This convention was not followed in the construction of this table, and the manner in which commodities are sold can be designed to come close to duplicating commercial transactions under any of these programs.

[17] Twelve thousand metric tons of wheat were provided under the Title III program in 1995, 14 thousand in 1996 and 7 thousand in 1998. Fifty-nine thousand metric tons of wheat were provided under the Title I program in 1998 and 60 thousand metric tons were provided under a government to government Section 416 (b) program in 1999.

[18] Taken from USDA's calculation of the UMR for wheat for Nicaragua for the program year beginning October 1, 1998, dated March 25, 1999.

Title I program. In FY99, USDA provided 60 thousand metric tons of wheat to Nicaragua under its Title I program (which supplied two thirds of the country's wheat market),[19] and a similar program or perhaps one half this size has been under discussion for FY2000. Currently the decision on this program appears to be contingent on the US Government getting an agreement from the Nicaraguan Government, prior to the approval of the program, that it will not re-introduce the price-band system that it had used in the past to try to stabilize the domestic prices of basic grains. Wheat could be a good commodity for the Title II PVOS to monetize in the event that USDA decides not to go ahead with a Title I program this year or decides on a smaller amount than last year. The fact that wheat is a

Advantages and Disadvantages to Monetizing Bulk Wheat

Advantages	*Disadvantages*
• There is a relatively large import market (imports averaged 88 thousand metric tons between 1994/ and 1998). • There would be no disincentive to national production (wheat is not produced domestically in Nicaragua). • There would be no disincentive to the national marketing system (the national system is based on wheat imports). • There will be a long-term need for wheat imports to meet growing consumption needs. • There is experience in monetizing wheat under the Title I and III programs, and the Title II PVOs could use the same mechanisms.	• USDA may decide to provide a substantial amount of wheat to Nicaragua under its Title I program this year. Last year (FY99), Title I imports supplied two thirds of Nicaraguan wheat market. • Wheat is a bulk commodity and would not have been given priority under the Title II Guidelines proposed for FY2000.

bulk commodity and would not have been given priority under the Title II Guidelines proposed for FY2000 could be another disadvantage.

Imports of Wheat Flour as an Option for Monetization

Monetization of wheat flour is another alternative, one that no one has given much thought to. It has some advantages, including that fact that the import and sale of wheat flour, using some type of auction mechanism, would increase competition in the wheat and wheat flour market and might help reduce the price of wheat flour and other wheat-based products to consumers. This could also be a disadvantage, howefver, if there were complaints from the local wheat millers that led to delays in the implementation of the program and subsequent delays in the receipt of the local currencies.

[19] This is assuming that the total wheat demand in the country is 90 thousand metric tons, which is consistent with the FAO and USDA PS&D estimates. However, if one uses the FAS estimate of 175 thousand metric tons, the 60 thousand metric tons of wheat that were imported under the Title I program would only account for a little over a third of total demand.

Advantages and Disadvantages to Monetizing Wheat Flour

Advantages	*Disadvantages*
• There is a relatively large market for wheat flour in Nicaragua. • There would be no disincentive to wheat production since wheat is not produced domestically. • There will be a long-term need for imports of wheat and/or wheat flour to meet growing consumption levels. • Wheat flour is a processed commodity and was to be given priority under the proposed FY2000 Title II Guidelines. • Wheat flour imports would increase competition in the wheat flour market and might help lower the price of wheat flour to consumers.	• USDA may decide to provide a substantial amount of wheat to Nicaragua under its Title I program this year. Last year (FY99), Title I imports supplied two thirds of the Nicaraguan wheat market. • Wheat flour imports would compete with the flour that is being produced by three local wheat mills that currently process all the wheat that is imported into the country and could run into political complications.

Rice

Production

In terms of area planted, rice is less important than corn or beans. However, in terms of value added to the economy, rice outranks both corn and beans. Rice production also is more concentrated geographically than the production of corn or beans. Forty-five percent of the rice is grown in the

Alternative Estimates of Rice Production*

Year	*Central Bank*		*MAG-FOR*		*FAO***		*USDA*	
	Area (000HA)	Production (000MT)	Area (000HA)	Production (000MT)	Area (000HA)	Production (000MT)	Area (000HA)	Production (000MT)
1990/91	38	72	38	72	40	77	57	102
1991/92	38	70	38	70	53	100	58	110
1992/93	44	83	44	83	57	131	60	100
1993/94	57	111	57	110	58	123	60	100
1994/95	56	102	58	112	63	151	57	98
1995/96	55	98	63	127	67	150	68	142
1996/97	67	140	68	142	72	174	72	143
1997/98	59	119	75	165	77	138	70	130
1998/99	56	105	68	127	64	88	70	140
1994/95-1998/99Av.	59	113	66	135	69	140	67	131

* Production estimates are given in milled equivalents. ** FAO estimates have been converted to their milled equivalent using a conversion factor of 65 percent.

Pacific Region and 40 percent in the North Central Interior. About 80 percent of the total irrigated rice is planted in the Pacific Region.

Rice production grew rapidly during the 1990s (at 10 to 12 percent per year depending on which

production estimates are used) as a result of increases in both area planted and yields. Production estimates vary, depending on the source. If one uses recent estimates from USDA and the Ministry of Agriculture and Forestry (MAG-FOR), Nicaragua produced 130 to 135 thousand metric tons of rice per year during the last five years (1994/95 to 1998/99).

Demand

According to FAO estimates, Nicaragua consumes on average approximately 190 thousand metric tons of rice per year.[20] This means that Nicaragua has to import rice in order to fill even current levels of effective demand. Rice consumption also has been growing rapidly, i.e. at an average annual rate of about 8 percent per year.

Imports

Nicaragua has been importing about 50 to 60 thousand metric tons of rice per year[21] to fill the gap between demand and domestic production. Seventy percent of the rice that is imported is imported in milled form. There are three to four major importers. COMERSA, the largest importer, usually imports rough or paddy rice and mills it in its own mills.

Nicaragua has been importing the majority of its rice from the United States, but other suppliers include other countries in the Central American Common Market, Argentina and Colombia. In 1998, the Government of Nicaragua approved the import of 13 thousand metric tons of milled rice from Vietnam. This agreement was in violation of a 1994 agreement signed by the Council of Central American Ministers of Agriculture that prohibited imports of Asian rice. Nicaraguan producers, through the Nicaraguan Rice Association (ANAR) and other local agricultural organizations, strongly opposed these imports because (1) they were thought to represent a phytosanitary threat to the region and (2) local producers, they argued, could not compete with this subsidized product from Vietnam.

USDA reports that local supermarkets prefer the quality of the rice from the United States, and usually buy U.S. milled rice in five pound bags from local importers such as COMERSA, GEMINA and RECSA. However, others argue that at least some Nicaraguan consumers are very price sensitive and would buy the cheaper Vietnamese rice if it were made available to them.

Imports of Rice as an Option for Monetization

Importing rice for monetization is a questionable option, more from the perspective of its potential impact on the commercial import market than because of its potential disincentive effects on domestic production. The Title II PVOs would have to monetize around 5 thousand metric tons of milled rice in order to garner the $2 million in local currencies that they need to support

[20] This estimate is for the 1993/97 period. The USDA estimate for the period 1995/99 is 180 thousand metric tons.

[21] Rice imports for the five years 1993 to 1997 averaged 60 thousand metric tons if FAO estimates are used, 49 thousand metric tons if data from USDA's PS&D data base is used, and 42 thousand metric tons if the data contained in the UMR that FAS calculated for the program year beginning October 1, 1998 is used.

their programs. This quantity is not likely to have a negative effect on domestic production, at least not as long as the rice is sold at world market prices and the buyers have to pay all the tariffs and taxes that would be applied to any commercial import. This represents less than 3 percent of total domestic consumption and only around 10 percent of imports.

The real issue with respect to rice is the impact that such a monetization could have on the commercial import market. There could be a number of disadvantages associated with trying to monetize rice in Nicaragua. There is an active commercial import market for this commodity, in which a number of countries actively participate. This suggests that there is potential for complaints from U.S exporters and other exporting countries if they feel that their commercial sales are being disrupted. Estimates of the supply and demand balance for rice, even though they are based on differing estimates of production and demand, also suggest that the gap between effective demand and domestic production plus commercial imports is small to non-existent. And,

Advantages and Disadvantages to Monetizing Rice

Advantages	*Disadvantages*
• The demand for rice is growing rapidly, as are rice imports. • The import market for rice is relatively large (imports averaged from 50 to 60 thousand metric tons between 1993/97).	• There is an active commercial import market for this commodity, in which a number of countries actively participate. • This suggests that there is potential for complaints from U.S exporters and other exporting countries if they feel that their commercial sales are being disrupted. • Estimates of the supply and demand balance for rice, even though they are based on differing estimates of production and demand, also suggest that the gap between effective demand and domestic production plus commercial imports is small to non-existent. • FAS set the maximum amount of rice that could be programmed into Nicaragua for concessional sales for the program year beginning October 1, 1998 at 0.

in fact, FAS set the maximum amount of rice that could be programmed into Nicaragua for concessional sales for the program year beginning October 1, 1998 at 0.

Beans

Production

Beans, which are considered to be one of the basic grains in Nicaragua, are grown throughout the country, often in association with corn, and mostly by small farmers. The Central Region accounts for about 70 percent of the cultivated hectares of beans and corn, followed by the Pacific Region with about 20 percent and the Atlantic Region with about 10 percent.

There are three distinct seasons for planting and harvesting beans – the Primera, Postrera, and Apante. The majority of the beans are harvested during the Apante season (50 percent), followed by the Postrera (31 percent) and the Primera (19 percent).

Activity	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Planting		Primera				Postrera		Apante				
Harvesting					Primera				Postrera		Apante	

Production estimates of beans also vary depending on the source. According to MAG-FOR estimates, bean production has averaged over 70 thousand metric tons over the last five years. FAO estimates that production has averaged over 80 thousand during the same time period, and the Central Bank

Alternative Estimates of Red Bean Production

Year	*Central Bank*		*MAG-FOR*		*FAO*	
	Area (000 HA)	Production (000 MT)	Area (000 HA)	Production (000 MT)	Area (000 HA)	Production (000 MT)
1990/91	105	54	105	54	112	72
1991/92	95	58	95	57	101	64
1992/93	91	56	91	56	114	77
1993/94	115	77	115	76	113	74
1994/95	120	83	120	83	138	88
1995/96	105	68	138	87	119	75
1996/97	120	75	120	74	139	71
1997/98	132	70	135	71	154	85
1998/99	188	147	64	42	150	94
1994/95-1998/99 Av.	133	89	116	71	140	82

estimates that production has averaged almost 90 thousand.

Demand

According to FAO estimates, Nicaragua consumes on average approximately 60 thousand metric tons of beans per year. Nicaraguan consumers prefer the small red beans that are produced domestically. Nicaraguans will eat other type of beans, if their preferred beans are not available. And, if red beans are available, other beans, such as the Pinto bean, will sell at a price discount to these beans.

Imports of Beans as an Option for Monetization

Monetization of beans is not a viable option because of the potential disencentive effects on both domestic production and markets, both the domestic market and the import/export market. Nicaragua is a net exporter of beans, and only imports a small quantity of beans each year. To garner the $2 million in local currencies that are needed, the Title II PVOs would have to import and sell approximately 2.6 thousand metric tons of red beans. This is more than the total amount of beans imported in 1997 (approximately 2 thousand metric tons) and more than half the amount imported in

1996 (approximately 4 thousand metric tons).

Red beans would be the easiest to sell, but the most likely to have a disencentive effect on prices and future local production, especially if they were imported and sold at the same time that the domestic

Advantages and Disadvantages to Monetizing Beans

Advantages	*Disadvantages*
•	• Nicaragua is a net exporter of beans, and only imports a small quantity of beans each year (approximately 4 thousand metric tons in 1996 and 2 thousand in 1997). • It would be hard to get 80 percent of CIF or better for Pinto beans, which are the type of bean that is most readily available from the United States, because Nicaraguan consumers prefer to eat red beans. • Trying to monetize red beans also has its drawbacks, because red beans are not always available from the United States or may only be available in small quantities. Furthermore, if red beans are monetized, especially at the time that the local harvest comes on the market, this could depress prices and have a disincentive effect on future domestic production.

production comes on the market. Red beans, however, are not always available from the United States. And, if not, the PVOs might have to settle for another type of bean which might be acceptable to consumers if it were made available as part of a free ration but which could only be sold at a discount. In other words, would be hard to get 80 percent of CIF or better for Pinto beans, which are the type of bean that is most readily available from the United States, because Nicaraguan consumers prefer to eat red beans.

White Corn

Production

Nicaragua produces white corn for human consumption to make "tortillas," deserts and other food preparations. White corn is the most important of the basic grains in terms of quantities produced and consumed.

Corn like beans is grown throughout the country, mostly by small farmers. The Central Region accounts for about 70 percent of the cultivated hectares of corn and beans, followed by the Pacific Region with about 20 percent and the Atlantic Region with about 10 percent.

There are three distinct seasons for planting and harvesting corn – the Primera, Postrera, and Apante. The majority of the corn is harvested during the first season (69 percent), followed by the Apante (17 percent) and the Postrera (14 percent).

Activity	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Planting		Primera				Postrera		Apante				
Harvesting					Primera				Postrera		Apante	

Production estimates for corn also vary. In this case from a low of a little over 270 thousand metric

Alternative Estimates of White Corn Production

Year	*Central Bank*		*MAG-FOR*		*FAO*		*USDA*	
	Area (000HA)	Production (000MT)	Area (000HA)	Production (000MT)	Area (000HA)	Production (000MT)	Area (000HA)	Production (000MT)
1990/91	175	198	175	197	194	199	198	236
1991/92	197	230	198	228	192	252	176	227
1992/93	175	227	175	225	218	284	220	283
1993/94	219	284	219	282	195	241	200	180
1994/95	196	241	196	239	279	331	225	263
1995/96	224	290	280	328	278	323	283	322
1996/97	279	322	279	320	261	264	259	292
1997/98	222	258	233	261	280	296	275	290
1998/99	245	298	162	212	261	296	280	320
1994/95-1998/99Av.	234	282	230	272	272	302	264	297

tons on average (MAG-FOR) to around 300 thousand metric tons (FAO and USDA).

Demand

According to FAO's estimates of the country's food balances, Nicaragua uses almost 240 thousand metric tons of white corn for human consumption per year (average for the years 1993 to 1997). Therefore, even it the lowest estimate of domestic production is used, domestic production appears to be more than sufficient to meet the country's needs for white corn for human consumption, given current levels of effective demand.

Corn also is in demand as an animal feed, but the large commercial poultry producers prefer to feed yellow corn, all of which has to be imported, in addition to domestically produced sorghum. In Nicaragua, the real competition, is between imported yellow corn and domestically produced sorghum – not domestically produced white corn. For this reason, the discussion of the potential disencentive effects of yellow corn imports will be discussed in the section that covers sorghum.

Sorghum

Production

Sorghum production also is more geographically concentrated than the production of corn and beans. About 75 to 80 percent of the area planted to sorghum is found in the Pacific region. The

majority of this is grown by large farmers, is mechanically harvested and is sold for animal feed. The remainder is grown primarily by smaller farmers in the northern part of the Central zone, is harvested by hand, and is used for human consumption. Over 80 percent of the sorghum is produced during the postrera season, which means that it is planted in September and harvested in December through January. The remainder is grown during the primera season (that is, it is planted in May and June and harvested in September and October).

Estimates of the amount of sorghum produced for sale as poultry feed vary from an average of a little over 30 thousand metric tons ((1994/95 to 1998/99) (MAG-FOR estimate) to over 50 thousand metric tons (Central Bank estimate). The USDA and FAO estimates are even higher (almost 70 thousand and over 80 thousand metric tons respectively) but these estimates also include the production of sorghum used for human consumption.

Alternative Estimates of Sorghum Production

Year	*Central Bank**		*MAG-FOR**		*FAO*		*USDA*	
	Area (000HA)	Production (000MT)	Area (000HA)	Production (000MT)	Area (000HA)	Production (000MT)	Area (000HA)	Production (000MT)
1990/91	45	70	31	25	48	70	48	71
1991/92	48	84	34	26	50	92	51	90
1992/93	52	90	46	33	54	102	54	102
1993/94	54	102	38	34	49	91	6	10
1994/95	32	71	36	32	28	58	38	48
1995/96	12	30	14	14	54	121	36	93
1996/97	25	74	41	36	46	87	28	59
1997/98	19	44	39	37	52	111	35	70
1998/99	26	34	41	34	43	53	35	70
1994/95-1998/99Av.	23	51	34	30	45	86	34	68

*Includes only industrial sorghum, i.e. sorghum produced by large-scale farmers for commercial sale as livestock feed.

Demand

The main commercial demand for this sorghum comes from the country's two large poultry producers -- La Estrella and Tip Top. Their current total demand for both sorghum and yellow corn is estimated at 91 thousand metric tons per year, which means that Nicaragua has to import yellow corn to meet current levels of demand. These firms buy the locally produced sorghum at harvest times -- December and January and August and September -- and import yellow corn to meet their feed needs during the intervening months. The demand for sorghum and yellow corn, in other words, is a derived demand. That is, the demand is driven by the increase in demand for poultry meat.

Poultry is the fastest growing segment of the livestock sector in Nicaragua. Poultry production grew rapidly during the 1990s (at an average annual rate of over 17 percent per year), increasing from 5.3 million chickens slaughtered in 1990 to 19 million in 1998. This growth leveled off

Estimates of Poultry Production, 1995-1998

Product	*1994*	*1995*	*1996*	*1997*	*1998*
Chicken meat (million lbs)	58.1	62.5	62.6	65.4	70.3
Table eggs (million dozen)	20.8	20.0	21.3	23.2	22.6

somewhat during the middle of the decade but then began growing again by 7.8 percent in 1998.

Imports of Yellow Corn as an Option for Monetization

Imports of yellow corn are another potential option for the Title II PVOs. Yellow corn imports do not compete directly with the locally produced corn, which is white, and which is used primarily for human consumption. So there is not a Bellmon problem with respect to domestic corn production.

Advantages and Disadvantages to Monetizing Yellow Corn

Advantages	*Disadvantages*
• Yellow corn imports do not compete directly with the locally produced corn, which is white, and which is used primarily for human consumption. • Measures are being taken to help insure that imports of yellow corn, which are used for animal feed, do not act as a disincentive to the production of sorghum, which is the main animal feed grown in Nicaragua. For example, the Government of Nicaragua reportedly has a policy that allows poultry producers to import yellow corn duty free once they have purchased all the locally produced sorghum at an agreed upon price. Some say this arrangement has worked well in the past, but problems have arisen this year.	• U.S. exporters have complained that their commercial markets are being disrupted by sales of corn that have taken place under the US PL480 and Section 416 (b) programs in Central America. • Yellow corn is a bulk commodity and would not have been given priority under the Title II Guidelines proposed for FY2000. • Yellow corn is used as an animal feed in Nicaragua, and priority under the Title II Guidelines proposed for FY2000 was supposed to be given to commodities that are consumed directly by humans.

Yellow corn imports, which are used as poultry feed, however, can compete with the production of sorghum, which is the main animal feed grown in Nicaragua. To ensure that local sorghum producers have a market for their production, the Government, according to several sources, has been encouraging the domestic poultry producers to agree in advance to purchase a specified minimum quantity of sorghum from these producers at an agreed upon price. These sources also indicate that the Government, to sweeten the deal for the poultry producers, also has agreed to allow the poultry producers to import the yellow corn they need duty free, once they have purchased all the locally produced sorghum that they had agreed to. This agreement was supposed to have been working well. However, recently complaints were being heard from the sorghum producers that the poultry producers were refusing to honor their purchase agreements at the previous agreed upon price. Since prices had fallen in the interim, poultry producers, reportedly, were balking at having to pay higher than current prices for the sorghum, and the sorghum producers just wanted them to honor their contracts. Whether monetizing yellow corn is a viable option or not ultimately will depend on USDA/FAS's

assessment of the import market, where it decides to set the Usual Marketing Requirement and whether there are any other proposals out there for monetizing yellow corn. For the program year beginning October 1, 1998, USDA/FAS set the import requirement for yellow corn at 25 thousand metric tons, the Usual Market Requirement at 4.9 thousand metric tons, and the maximum amount available for U.S. programming at 20.1 thousand metric tons. Data available from other sources, including from USDA's PS&D data base and FAO trade data and data on food aid imports, suggests that the both the size of the import gap and the average quantity of commercial imports were higher than these estimates. This data also suggests that the amount available for U.S. programming could be higher than 20 thousand metric tons during the coming year. However, even if the UMR were to be set at approximately 20 thousand metric tons again this year, the Title II PVOs could still consider the monetization of yellow corn since their local currency needs could be satisfied with a monetization of around 12 thousand metric tons.

On the other hand, the import market for yellow corn is relatively smaller and relatively small changes in domestic production, for example, or in commercial imports, could quickly make yellow corn a much more or much less attractive option. The potential for yellow corn to substitute for domestically produced sorghum and the current problems between the sorghum producers and the poultry industry also suggest the need for caution with respect to yellow corn, and the need for a more in-depth market analysis closer to the time of the actual monetization.

Soybeans

Soybean Production

Cottonseed used to be the main domestic source for vegetable oil in the country. However, the production of cotton has dropped dramatically (area planted to cotton was down to only 8 thousand hectares in 1997), due to low returns. Nicaragua is a high cost producer and international prices for cotton are low. Since 1990, the land that traditionally went into cotton has been shifted to more profitable oilseeds, including soybeans, sesame and peanuts. The sesame seeds and peanuts are exported whole, leaving the cottonseed and soybeans as the only domestically produced products to be crushed for oil for human consumption.

Alternative Estimates of Soybean Production

Year	*MAG-FOR*		*FAO*		*USDA*	
	Area (000 HA)	Production (000 MT)	Area (000 HA)	Production (000 MT)	Area (000 HA)	Production (000 MT)
1990/91	2	4	6	9	0	0
1991/92	3	4	3	5	3	6
1992/93	3	5	6	10	6	10
1993/94	6	10	8	18	8	18
1994/95	8	18	9	20	9	21
1995/96	9	20	10	22	10	22
1996/97	10	22	12	29	13	29
1997/98	14	29	21	31	21	31
1998/99	18	27	18	31	21	31
1994/95-1998/99 Av.	12	23	14	27	15	27

The production of soybeans increased seven-fold during the 1990s, from an average of 4.5 metric tons during the years 1990/93 to almost 29 thousand metric tons in 1997/98 (MAG-FOR estimate). This growth was due in part to strong international prices during the middle of the decade. Since then, the trend in international prices has been downward. Despite this more recent downward trend in prices, MAG-FOR had originally projected a record production for 1998/99 of 46,500 metric tons of soybeans on 21 thousand hectares. However, 14 percent of this area was lost due to the effects of Hurricane Mitch and yields dropped significantly on the remaining areas, with the result that the actual production for 1998/99 did not even reach 27 thousand metric tons.

Soybeans are grown by approximately 350 medium and large-scale farmers, with an average farm size 56 to 140 hectares. The production of soybeans is mechanized and requires technical and financial assistance, which is usually provided as part of the sales agreement with the national oil processing company. Soybeans are planted in July through September and harvested November through February.

Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Planting							▒	▒	▒			
Harvesting	▒	▒									▒	▒

Demand for Soybeans and Soybean Meal

The demand for soybeans is a derived demand. That is, the demand is driven by the demand for vegetable oil and soybean meal. Soybean meal, which is actually a by-product produced when the oil is extracted from the bean, is in demand as a feed concentrate for poultry, cattle and swine.

The poultry industry is the largest consumer of soybean meal in Nicaragua, and the demand for soybean meal is growing along with the growing demand for poultry. According to information prepared by USDA's Agricultural Affairs Office in Managua, the demand for soybean meal has averaged 26 to 28 thousand metric tons per year. A more recent industry-based estimate is that the poultry industry will need 29.5 thousand metric tons of soybean meal for the 1999/2000 season. In terms of soybeans, this means that the poultry industry will need the equivalent of over 37 thousand metric tons of soybeans, or approximately 10 thousand metric tons more than was produced last season.

Reportedly, only one local firm, GRACSA (Grassas y Aceites, S.A.), has the capacity to crush soybeans for their oil and meal. GRACSA is said to purchase 70 percent of the domestic harvest of soybeans for the production of soybean oil for local production. GRACSA meets half of its demand for soybeans through local production (approximately 27 thousand metric tons) and imports the rest as either whole soybeans or unrefined oil, mainly from the United States. GRACSA operates only four months per year.

GRACSA's ability to continue to produce soybean oil and meal from local production or imported

whole soybeans is in question. This is because of recent damage to its equipment as well as financial difficulties stemming in part from an arrangement that it had with the soybean producers during the last cropping season. According to several sources, GRASCA had signed a contract with the soybean producers during the last cropping season (FY98/99) at an agreed upon price. This was before prices dropped on the international market, and GRASCA was not able to recover its costs through its own sales of soybean oil and meal. According to industry sources, GRACSA has not signed a contract with the soybean producers for the FY99/2000 season, and many producers are switching to other crops including sorghum, sesame and peanuts.

As a consequence, industry sources expect only 8.4 thousand hectares to be planted to soybeans this year, which is significantly less than the 12 to 15 thousand hectares that has been planted on average during the last five years. If one assumes an average yield of 2 metric tons per hectare, this would mean that only 16.8 thousand metric tons of soybeans would be produced domestically which translates into approximately 13.3 thousand metric tons of soybean meal. This means there could be a gap of over 16 thousand metric tons of soybean meal between the industry's estimate of this year's demand and local supply.

Imports of Soybeans as an Option for Monetization

This is not a viable option. The import market for soybeans in Nicaragua is small to non-existent. Plus, equipment and financial problems on the part of the only soybean crushing plant in Nicaragua may reduce the amount of local soybeans that can be crushed and make imports of whole beans even more problematical.

Advantages and Disadvantages to Monetizing Soybeans

Advantages	*Disadvantages*
•	• The import market for soybeans in Nicaragua is small to non-existent. • There is only one major buyer, which is a disadvantege in and itself. Plus, equipment and financial problems may make it difficult for this firm to even process domestically produced soybeans this year. • Soybeans are a bulk commodity and would not have been given priority under the Title II Guidelines proposed for FY2000.

Imports of Soybean Meal as an Option for Monetization

This is a potential option for the Title II PVOs. Local production of soybeans is not sufficient to fill current demand for soybean meal. So imports, as long as they are sold at commercial prices, are not likely to distort prices or have a disincentive effect on local production. Plus the demand for soybean meal has been growing along with the demand for poultry products.

One disadvantage is the amount of uncertainty in this market right now about the ultimate size of the import demand. This is because of uncertainty about domestic production in the coming year (current projections are for a much smaller soybean crop in 1999/00) and uncertainty about whether GRASCA, the only one of the major importers that also has the capacity to crush soybeans, will be able to overcome its current technical and financial problems. This latter problem could end up being an advantage, at least to those entities thinking about monetizing soybean meal. That is, in the event this firm is not able to fix its equipment in time to process domestically produced soybeans, the demand for imported soybean meal will be even larger than is currently estimated.

Whether this is a viable option or not ultimately will depend on USDA's assessment of the total demand for soybean meal in this market, where it sets the Usual Marketing Requirement, and how may other PVOs are proposing to monetize soybean meal. USDA/FAS, in its assessment of the Nicaraguan market for soybean meal for the program year beginning on October 1,1998, set the import requirement at 35 thousand metric tons, the Usual Marketing Requirement at 19 thousand metric tons, and the maximum amount available for U.S. programming at 16 thousand metric tons. If the maximum amount available for U.S. programming were to be set at 16 thousand metric tons again, there would be room for both the Technoserv Section 416 (b) proposal (6 thousand metric tons) and a Title II PVO monetization (their local currency needs could be satisfied with a monetization of approximately 8 thousand metric tons) with a little room to spare.

Advantages and Disadvantages to Monetizing Soybean Meal

Advantages	*Disadvantages*
• Local production cannot fill local demand. • Demand has been increasing dramatically due to the rapid expansion of the poultry industry. • Imports are not likely to have a disencentive effect on local soybean production.	• There are a lot of uncertainties in this market right now. This is because of uncertainty about domestic production in the coming year (current projections are for a much smaller soybean crop in 1999/00) and whether one of the major importing firms (which is the only firm that also has the capability of crushing soybeans) will be able to overcome its current financial and technical problems. • Once the UMR calculations are completed, the amount available for U.S. programming may not be large enough for another program in addition to the 6 thousand metric tons that Technoserv plans to bring in under the last year of its Section 416(b) program.

As indicated earlier, data available from other sources, including the Nicaraguan poultry industry, suggests that both the demand for soybean meal and the import gap may be lower than the USDA estimate, which suggests that the amount available for U.S. programming may have to be adjusted

downward from last year. USDA arrived at its 35 thousand metric ton import requirement for last year by assuming that consumption needs were 35 thousand and domestic production was 0. This contrasts with a poultry industry estimate of demand that is less than 30 thousand metric tons and a level of domestic production of soybean meal of at least 13 thousand metric tons. This latter estimate assumes that the local crusher stays in operation and processes most of the domestically produced soybeans rather than exporting them.

Vegetable Oils

Demand for Vegetable Oils

Vegetable oil is an important component of the Nicaraguan diet, accounting for 11 percent of total calories. According to FAO food balance sheet estimates, the country uses approximately 60 thousand metric tons a year, on average, with 40 thousand metric tons being used for direct human consumption. Vegetable oil is a preferred commodity, and human consumption has been growing rapidly, at a almost 10 percent per year over the last eight years. Sold principally for cooking purposes, vegetable oil can be found in all major food stores as well as in the most rural village.

Local production of soybeans and cottonseed are unable to fill the country's demand for vegetable oil. FAO estimates that oil produced using locally produced oilseeds accounts for less than a quarter of total domestic supply. Locally produced soybeans alone account for around 5 thousand metric tons of vegetable oil per year (assuming that 27 thousand metric tons of soybeans are produced a year on average and that the conversion rate is 17.8 percent) which represents around 8 percent of total demand. If domestic production of soybeans falls to 16.8 thousand metric tons during the coming crop cycle, this implies that the amount of soybean oil available from domestic production could fall to less than 3 thousand metric tons or around 5 percent of total supply.

Imports

Both soybean oil and palm oil are imported to fill the large gap between domestic production and effective demand. Most vegetable oil is imported in the form of crude degummed oil and refined in country. There are eight companies that process and sell vegetable oil and shortening in Nicaragua. The three largest – AGROSA, GRACSA and E. Chamorro – control approximately 70 percent of the

Commercial Imports and Donations of Crude Degummed Vegetable Oil

(1,000 Metric Tons)

Market Year	*U.S. Donations*	*Other Donations*	*Total Donations*	*Commercial Imports*	*Total Imports*
1993	0	0	0	44	44
1994	0	4	4	52	56
1995	0	1	1	39	40
1996	0	3	3	31	34
1997	0	0	0	43	43
Average (1993/97)	0	2	2	42	44

Source: U.S. Embassy Bellmon/UMR Determination for the Section 416 (b) program, January 1998 and information provided to the author by the GON Title I/III Secretariat, October 1999.

market. The industry buys its vegetable oil from the United States, Argentina, other countries in the Central American Common Market, the European Union, and Malaysia among others. The distribution network controlled by these three companies encompasses nearly the entire country, and reportedly is fairly efficiently managed, with oil processing plants disbursed throughout the country.

According to estimates developed by USDA's Agricultural Affairs Office in Managua, commercial imports of vegetable oil averaged around 42 thousand metric tons for the period 1993/97 and donations averaged 2 thousand metric tons.

Soybean Oil as an Option for Monetization

From a Bellmon perspective, soybean oil is a potential commodity for the Title II PVOs to import. Imports of vegetable oil are not likely to have a disencentive effect on the local production of soybeans. Local production is only able to supply a small portion of total demand. Demand has been increasing rapidly. And the amount that the Title II PVOs would have to import in order to meet their local currency needs represents a very small portion of the total import market (only 3 thousand metric tons out of a total of 40 to 45 thousand metric tons).

Whether this is a viable option or not ultimately will depend on USDA's assessment of the total demand for vegetable oils in this market, where it sets the Usual Marketing Requirement, and how many other proposals there are out there for monetizing soybean oil

Advantages and Disadvantages to Monetizing Soybean Oil

Advantages	*Disadvantages*
• Local production cannot fill local demand. • Demand has been increasing rapidly. • Imports are not likely to have a disencentive effect on local soybean production. • The amount needed to import relative to total imports is small.	• There are a lot of uncertainties in this market right now, because of uncertainty about domestic production in the coming year (current projections are for a much smaller soybean crop in 1999/00) and whether one of the major importing firms (which is the only firm that also has the capability of crushing soybeans) will be able to overcome its current financial and technical problems.

Summary of Commodity Analyses

Most of the commodities that were analyzed (wheat, wheat flour, rice, yellow corn, soybean meal and soybean oil) meet the Bellmon test. That is, these commodities could be monetized in the quantities required without having a disencentive effect on local production or markets. The caveat is that they need to be sold at market prices and the buyers need to pay all the tariffs and taxes that would be applied to any commercial import of these products.

Productivity levels are low in the Nicaraguan agricultural sector, and the country already relies on imports of these commodities to meet current levels of effective demand despite the positive levels of protection that producers are receiving as a result of the combined effects of current government policies. Nicaraguan farmers are responsive to prices, and the fact that the prices for a number of these products are declining on international markets could have a depressing effect on domestic production independent of the food assistance program. However, the more serious constraints to increased domestic production of these products[22] are internal to the Nicaraguan economy and include the high cost of inputs and the lack of productive infrastructure which also leads to higher production and marketing costs.

Whether any of these commodities are viable options for monetization ultimately will depend on USDA's assessment of the total import demand for the commodity and where it sets the Usual Marketing Requirement. The viability of each of these options also depends on the decisions that USDA makes with respect to its Title I program and the five Section 416 (b) proposals that it has received. Close coordination will be required between USAID and USDA in making the commodity selection. If the commodity selected also is included in one of USDA's programs, close coordination also will be required in the implementation of the monetization to avoid market disruptions. Coordinating the timing of the shipments and sales is particularly important to avoid over taxing the storage and distribution system and competing with each other with respect to sales price.

Summary of the Analyses of the Individual Commodity Markets

Commodity	*Potential for Disincentive Effects on Local Production and Markets*		*Uncertainty about the Viability of a Monetization with Respect to the UMR Analysis*	
	Yes	No	Yes	No
Wheat		X	X	
Wheat Flour		X	X	
Rice		X	X	
Beans	X			
Yellow Corn		X	X	
Soybeans	X*			
Soybean Meal		X	X	
Soybean Oil		X	X	

*The problem with soybeans is that the import market is small to non-existent and that equipment and financial problems may make it difficult for the one soybean crusher to even process domestically produced soybeanas this year.

Wheat and crude degummed soybean oil are the most attractive options at this point in time. This is because the total import market is much bigger for these commodities than for some of the other commodities that were considered, and the country is much more dependent on imports to meet demand for these commodities. Nicaragua is totally dependent on wheat imports to meet its domestic needs and substantially dependent on imports of vegetable oil. Furthermore, in order to supply their

[22] Wheat, which is not suitable for production in Nicaragua due to inappropriate climatic conditions, is an exception.

US $2 million in local currency needs, the Title II PVOs would only have to import approximately 8.5 thousand metric tons of wheat, which is less than 10 percent of average import levels, or only 3 thousand metric tons of crude degummed soybean oil, which is less than 10 percent of average import levels.

Soybean meal and yellow corn are two other options. These monetizations would be more complex, however, because the local market is smaller and domestic production is more important. This means that shipments and sales would have to be more carefully timed to avoid having a disincentive effect on local production which could happen if the product arrives at the ports at the same time that local production is coming into the market.

Nicaragua is clearly dependent on imports of soybean meal to meet the needs of its poultry industry, and the domestic production of soybeans and soybean meal may be lower than normal this coming season due, at least in part, to the technical and financial difficulties that are facing its one local crushing plant. On the other hand, the PVOs would have to import approximately 7.8 thousand metric tons of soybean meal to meet their local currency needs which is a more substantial share of the country's import needs irrespective of which estimates of supply and demand are used. (For example, this represents almost a quarter of USDA's estimate of the country's total import demand during the last program year, which is higher than the industry's estimate for this year, and almost half of the amount that was available for U.S. programming last year.). Plus it is already known that the Title II PVOs would have to share whatever import market there is with Technoserv which is planning to monetize 6 thousand metric tons of soybean meal under the last year of its Section 416 (b) program.

Nicaragua also depends on imports of yellow corn to meet the feed needs of its poultry industry. The poultry producers also feed sorghum, but domestic production is not sufficient. To meet their local currency needs, the Title II PVOs would have to monetize almost 12 thousand metric tons of yellow corn. Here again the size of the market is relatively small and relatively small changes in domestic production, for example, or in commercial imports, could quickly make yellow corn a much more or much less attractive option. The potential for yellow corn to substitute for domestically produced sorghum and the current problems between the sorghum producers and the poultry industry also suggest the need for caution with respect to yellow corn, and the need, in the event this option was selected, for a more in-depth market analysis closer to the time of the actual monetization.

Rice is not a good option. On the plus side, domestic production does not cover demand, even though production has been growing fairly rapidly, and the import market is relatively large. The disadvantage is that a rice monetization could disrupt the commercial import market and might even displace commercial U.S. rice exports. Beans are not a viable option for Bellmon reasons and soybeans because of internal processing constraints.

Another option is to provide the Title II PVOs with the local currencies that they need out of the resources that have already been generated under last year's Title I program. This would have to be agreed to by the Government of Nicaragua. However, this option has a number of attractive features, for USAID and the Title II PVOs As well as USDA. There are two pluses from the perspective of USAID and the Title II PVOS. First, access to these currencies is likely to be quicker than if the Title

II PVOs had to import and monetize a commodity on their own. Second, it would eliminate the need for them to spend time and resources on the monetization process and allow them to concentrate on the implementation of their development programs. This option also would allow USDA to consolidate all the monetization programs under its own direction, which should simplify the management of its programs and reduce coordination problems and potentials for disrupting commercial markets.

Assessment of Storage Capacity

Storage should not be a problem. Nicaragua possesses more than adequate buik grain storage capacity. The Sandinista Government in the 1980s developed storage facilities that could hold more than a year's grain stocks. And the Government of Nicaragua's Grain Stabilization agency (ENABAS) reportedly still has 20 silos for rent with a combined storage capacity of 45 thousand metric tons each. The three wheat millers also typically keep at least three months stocks. The largest vegetable oil refiners have the capacity to store 4 to 5 thousand metric tons of oil at their individual plants. And, several of the smaller processors can store approximately 1,000 metric tons each.

The Port of Corinto, which is the most suitable of the Nicaraguan ports for commercial imports, has a capacity to handle 1.5 million metric tons of cargo per year, and significant storage capacity for basic grains exists near the port at various industrial facilities. There is also storage capacity for up to 10 thousand metric tons of vegetable oil at or near the port.

OTHER COMMENTS AND CONSIDERATIONS

Agricultural Production and Trade Statistics

The multiple estimates of production and trade in agricultural commodities and the relatively large differences in these estimates in some cases complicate any analyses of the Nicaraguan agricultural sector. MAG-FOR has begun to use more modern survey techniques to improve some its production estimates, but it is not clear that these techniques are being used to their full extent, or that other institutions are willing to accept these results. The country's trade statistics are particularly troublesome, with wide variations in estimates of even official trade flows among the different sources – the Central Bank, FAO and USDA. And none of these sources take adequate account of trade flows within the Central American region.

Improvements in the country's production and trade statistics would make it easier to do market analyses in the future and increase ones confidence in the results of these and other analyses of the agricultural sector. Poor quality of public information, including multiple and inconsistent estimates, on domestic production and trade reduces market transparency and disadvantages potential new entrants to markets.

Resources have been made available to USDA under the Hurricane Mitch supplemental to use to help support improvements in the collection and analysis of food security-related data in the Central

American region. USAID/Nicaragua and the Government of Nicaragua should try to take advantage of this opportunity to support improvements in Nicaragua's agricultural production and trade statistics. Consideration should also be given to using some of the local currencies that have been generated from the Title I and the Section 416 (b) programs to support such improvements.

Regional Trade Flows and Regional Market Analyses

Regional markets in Central America are becoming more integrated. This is particularly true for markets for some of the basic staples – commodities that also are provided to the Central American countries under the U.S. food assistance programs. Because the markets for these commodities are more integrated now than in the past, an oversupply in one country is more likely now than in the past to flow into other countries in the region and could destabilize these markets as well. In other words, the amount of food assistance programmed into any one of the Central American countries has implications for each of the other countries and for their domestic production and markets. If food is over programmed in the region, this also could have implications for each country's trade policies and could have a negative effect on progress toward regional integration.

The preceding discussion raises the question as to whether a traditional single country analysis will continue to be a sufficient basis for making a Bellmon determination, or for that matter, for setting a UMR. This is not an issue that the Nicaragua Mission needs to deal with immediately or one that it can take a decision on unilaterally. It is, however, an issue that should be kept in mind, and one that can and should be discussed and followed-up on with the USDA team referred to above and the new Regional Food for Peace officer.

Monetizations and Market Distortions

Food assistance programs have the potential to disrupt local markets and discourage local production, which is why the Bellmon amendment was added to the PL480 legislation. There are ways to design programs to minimize the potential for such disincentive effects, however. The price at which the commodity is sold is of major importance. The objective in a relatively open market such as Nicaragua is to sell the product to a buyer(s) at a price that is close to the price that he/she would pay if the transaction were a commercial one. This means that buyers of a commodity that is imported under a food assistance program should pay all the tariffs and taxes that they would be required to pay if the product were a normal commercial import. The condition that commodities that are made available under a food assistance program should be able to be imported free of duties was meant to protect the resources designated for charitable programs – not to provide a resource transfer to commercial businesses. Whether the product is donated to and being sold by the Government or donated to and being sold by a PVO should not make a difference – normal tariffs and taxes should be charged to the buyers.

There are advantages to following these procedures in addition to reducing the potential for distorting markets. Applying the normal tariffs and taxes to these sales will help increase the amount of resources that are transferred to the government as a result of the commodity donation. In the case of a PVO monetization program, following these procedures should not have any

effect on the amount of local currencies that they are able to generate from a given quantity of commodity resources. However, there are examples, where governments have agreed to provide some or all of the resources collected through the taxation of these sales to the PVOs as part of their contribution to the PVOs development programs.

Monetization Mechanisms

The way in which commodities are monetized also can distort markets. And the mechanisms that are chosen have to take into account the specifics of each country situation and each commodity market.

Nicaragua is a small market and the markets for most of the potential Title II commodities are dominated by a few major buyers. Wheat is bought by three millers, crude degummed soybean oil by the three major refiners, sorghum and soybean meal by two major poultry producers and a few feed producers. Even rice imports are dominated by three to four major importers. It is particularly hard to see how one could structure a sale to add more competition into the marketing system in the case when the product needs further processing before it can be sold to the ultimate consumer and there are only a few entities in country that have the capacity to do the processing. For example, if one is selling wheat or crude degummed soybean oil, where there are only a very limited number of buyers, negotiating a sales price with one or more of these entities based on the actual costs of the delivering the commodity to the country, including the shipping and other costs associated with transporting, is just as likely, perhaps more likely, to be sold at a world market price than going through the process of trying to sell the commodity through the local commodity exchange. In these cases, a negotiated sale probably comes closer to mimicking a commercial transaction than an auction would.

There are other commodities -- commodities for which there are larger numbers of buyers – that would be more appropriate for sale on a commodity exchange. These include wheat flour, milled rice and refined vegetable oil. In these cases, however, one would have to undertake a very careful price/cost analysis to insure that a sales price that would be competitive with the price at which the locally milled or refined commodity is sold would enable the PVO to recover 80 percent of the CIF price for the product or better. It might even be possible to use the local commodity exchange to monetize a commodity like corn or soybeans, where it might be possible to expand the pool of potential buyers by selling in lot sizes that would be attractive to smaller-scale agro-industries. These options are more complicated, however, and would require more time on the part of the PVOs both for analysis and implementation. In other words, there are trade-off involved here with respect to time and resources on the one hand and objectives on the other that both USAID and the Title II PVOs should think through clearly before deciding to embark on any experimental type of monetization program.

If one were to expand the market for a monetization to include all of Central America, one could use the network of local commodity exchanges to sell even products such as wheat. By expanding the number of countries in which the sale would take place, one would also expand the number of potential buyers and enhance the likelihood of competition. This suggestion was made by the President of the Board of Directors of the Nicaraguan commodity exchange – BAGSA. It is an interesting one, and one that would be difficult to implement. Again, this is not anything that the Nicaragua Mission needs to deal with immediately or one that it could take a decision on unilaterally. It is, however, an idea that

should be kept in mind, and one that can and should be discussed with the USDA team referred to above and the new Regional Food for Peace officer.

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